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H. D. Arnold

SYSTEM OF
PHYSIOLOGIC THERAPEUTICS

VOLUME VIII

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A SYSTEM

OF

PHYSIOLOGIC THERAPEUTICS

A PRACTICAL EXPOSITION OF THE METHODS, OTHER THAN DRUG-GIVING, USEFUL FOR THE PREVENTION OF DISEASE AND IN THE TREATMENT OF THE SICK

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VOLUME VIII

REST
MENTAL THERAPEUTICS
SUGGESTION

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PREFACE

Rest is of prime importance in physiologic therapeutics. Its general principles are well understood. Numerous special instances of its application have been described in preceding volumes; as, for example, the general rest and sleep of fever-patients, in connection with the discussion of hydriatric measures, and the local rest of the stomach in cases of gastric ulcer, in connection with the discussion of dietetics.

The present volume is largely but not exclusively devoted to the discussion of a systematic method of treatment—often called 'Rest Cure'—of which rest constitutes the central factor, and which is applicable chiefly in the management of patients suffering with disorders of the nervous system. Its satisfactory exposition has necessitated a somewhat wider range of view over etiologic, pathologic, clinical, and diagnostic relations, than is required in treating of the other methods of physiologic therapeutics.

The author has endeavored to present the subject in a systematic manner. Simple physiologic truths and clinical facts have, so far as possible, been placed side by side, together with logical deductions in regard to treatment. The differences between simple neurasthenia (the fatigue neurosis) and the various spurious forms of neurasthenia,—which the author has embraced under the designation of the neurasthenoid states and neurasthenia symptomatica,—have been carefully pointed out, as well as the bearing of this distinction upon questions of treatment and prognosis. The modifications of rest methods required by hysteria have also been dwelt upon. To hypochondria has been given its true nosologic value,—that of a well-marked and readily differentiated clinical entity, only too frequently confounded with neurasthenia and hysteria. In the section

on mental diseases the author has considered the question of treatment in all its phases, laying stress on the importance of simple physiologic methods, while to medicines has been assigned a secondary value.

The concluding section of the book deals with a topic of the greatest moment in the treatment of nervous and mental diseases, and which has an important bearing upon the management of the sick in general. The influence of the mind, both in the causation and on the course of disease, while not infrequently exaggerated in general literature and in pseudo-scientific writings, is real, and must be recognized by physicians. The author discusses this influence and its utilization in medicine, under the head of 'suggestion.' A sharp distinction is drawn between that form of suggestion which is normally and properly practised by all physicians in their daily intercourse with their patients, and the various forms of suggestion—mesmerism, hypnotism, faith cure, eddyism, and the like—which embody as their underlying principle the induction of an abnormal mental state—a state which the author believes to be identical with hysteria. In the preparation of the section on hypnotism, free use has been made of the works of Wetterstrand, Bernheim, Löwenfeld, Lloyd Tuckey, and many others; among which, especial mention should be made of the admirable essays of William Hirsch. The facts have been impartially set forth, submitted to scientific analysis, and the inevitable conclusion as to the true position of hypnotism frankly stated. Purely theoretic considerations have, so far as possible, been avoided; and the historical accounts of the superstitious and delusionary practices cited as illustrations of the general theme, have been pruned to the necessary minimum.

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PART I.—REST

CHAPTER I

FUNCTION AND ITS RESULTS

Chemical, Morphologic, and Physical Changes in Functionating Organs and Tissues; Exercise Involves Loss of Substance; Reconstitution by Rest. Physiologic Function of Waste Products; Toxic Action of Waste Products.

In order that we may appreciate fully what is implied by **rest,** it is necessary to consider briefly some of the general facts relating to normal function. Among the various organs of the body, the exercise of function implies varying degrees of activity. There are organs, such as the bones, in which the part played is purely passive, and others, such as the muscles, in which the part played is extremely active. The exercise of function implies a **nutritive change** —a change which is marked in direct proportion to the degree of the activity. Even the bones have been demonstrated to undergo a change, though that change is very gradual and is to be observed only after such lapse of years as marks the transition from one period of life to another. The same is true of cartilage, tendons, ligaments, and other connective-tissue structures. It is, however, in the muscles,

the nervous system, the digestive apparatus, the blood, the blood-making organs, and the various glands (both those of internal and those of external secretion) that this fact of change finds its highest expression.

Tissue-changes of Function

The change that accompanies the exercise of function may be **chemical, morphologic,** or **physical;** as a rule it partakes of all these qualities in varying degree. The most convenient illustration that can be presented, is that offered by the **muscles.** These during functional activity undergo, first, striking **chemical** changes: Thus the chemical reaction, which is neutral or feebly alkaline in a muscle at rest, becomes acid, through the production of phosphoric acid, in a muscle that is active; there is also in the active state a greatly increased elimination of carbon dioxid while the tissue consumes proportionately more oxygen; further, the active muscle contains more water, it yields an augmented quantity of extractives soluble in alcohol, a lessened quantity of extractives soluble in water, a lessened quantity of substances producing carbon dioxid, a lessened quantity of fatty acids and of kreatin and kreatinin, and a lessened quantity of glycogen. Secondly, **morphologic** changes are manifested. The muscle-fiber during activity presents striking alterations under the microscope; the fiber becomes thicker, the transverse striæ approximate each other, and the doubly and singly refractive media of which the fiber is composed exhibit striking differences from the condition observed when at rest. Thirdly, the **muscle as a whole** changes its shape and becomes harder and more resistant. Finally, its **circulatory relations** are modified: its capillaries dilate, it contains more blood, and the blood in its veins differs chemically from that found in its veins when at rest. Certainly no argument is needed to show, at least so far as the muscles are concerned, that the condition of functional activity differs radically from that of rest. Indeed, so great is the contrast in the attending phenomena that function may well be described as the antithesis of rest. This fact, which is so evident as to muscles, is probably equally true as to other tissues, though our knowledge of the details is unfortunately much more meager.

Thus **nerve-substance,** like muscle, when at rest is neutral or feebly alkaline, and when active, is acid. It has not, however, been possible to determine the chemical changes in detail. Not even the exchange of oxygen and carbon dioxid has been demonstrated, though the facts attending vascular supply and temporary obstruction justify the inference that such changes of necessity take place. The effect of temporary compression of the vessels of the brain or of the abdominal aorta in producing arrest of function—of the brain, on the one hand, or of the cord, on the other—is an instance in point. Further, the presence of substances that are the products of retrogressive metamorphosis can have but one meaning. In addition, a number of observers have demonstrated that nerve-cells in rest and activity present marked differences histologically. Thus, Hodge, Vas, Nissl, Mann, Lugaro, and others have studied the **changes in nerve-cells** that result from function. While the various investigators differ somewhat as to details, they agree as to the essential facts. They have discovered that during rest the chromatic substance in the cells increases in amount, and that during functional activity it is diminished. Activity of the nerve-cell is first accompanied by swelling of the protoplasm of the cell-body, later by a progressive diminution in the size of the cell-body. If functional activity be prolonged, the nucleus undergoes changes similar to those of the cell-body, and this is true also of the nucleoli; there is at first an increase in volume, which subsequently gives way to the reducing action of fatigue.

As regards the changes observed in other structures than nerves and muscles, it may be stated as a general fact that **all organs** in which periods of rest alternate with periods of activity, present striking differences, chemical and morphologic, corresponding with these periods. The behavior of the **salivary glands** or of the glands of the **stomach** needs only to be alluded to in this connection. In structures in which function is not periodic, no contrasts of state can of course be found, but the great truth of change, chemical and structural, accompanying functional activity either can be demonstrated or is a matter of logical inference. Again, even in the case of such organs as the **blood-making structures** and the **glands of internal secretion,** it is extremely probable that the same degree

of activity is neither steadily nor always maintained, and that these organs likewise have periods of maximal and of minimal function.

The changes, chemical and morphologic, taking place in muscles and nerve-cells during the exercise of function indicate a consumption of tissue,—a consumption which depends directly upon increased oxidation. In other words, the evolution of energy is the result of increased oxidation. To the physician this physiologic truism becomes of greater significance when re-stated as follows: **the expenditure of energy means loss of substance.** As opposed to this, **rest,** functional inactivity, is accompanied by the reconstruction of tissue—by the **restitution of substance.** This fact acquires additional force when we reflect that the restitution of substance is really the storing up of energy in a latent form. It is clear, finally, that in order to preserve the physiologic condition known as health, there must be a due proportion between functional activity and rest.

Action of Waste Products

Another factor now presents itself, and that is the rôle played by the products of normal **tissue waste.** It is extremely probable that waste products circulating in the blood in normal amount are not toxic in their action, and in reality exercise an important and beneficial function in the economy. In order to obtain an idea as to the action of such substances, we need but allude to the following experiment: It is well known to physiologists that if a frog muscle which has been completely exhausted by electric stimulation and refuses any longer to respond, is washed out by injecting into its artery ordinary salt solution, the muscle again reacts to the electric current, and almost as well as before. Evidently the action of the waste products restrains or inhibits the muscular contraction; and the question arises, May it not be that this is one of nature's methods of preventing undue or excessive fatigue? If it be true that the action of the muscles is inhibited by the waste products resulting from functional activity, this is probably also true of the rôle played by waste products in other organs, more especially in the nerve-centers. Indeed, the probable physiologic action of waste products present in normal amount is to induce rest by

retarding activity. Considered in this light the various **fatigue substances** normally thrown into the circulation act as **sedatives** upon the nerve-centers and are among the direct causes of rest and of sleep. Fatigue is as much an effect of the presence of waste substances as it is of the consumption of tissue.

Excessive exercise of function leads primarily to the excessive consumption of tissue. Under these circumstances the waste substances thrown into the circulation are present in abnormal amount, and instead of a sedative or retarding influence, exert a **toxic** action. They no longer act as gentle restrainers of function, as preventives of unphysiologic waste, but as poisons. In all probability their effect upon the nerve-centers is now that of irritants and excitants, and instead of inducing rest, they disturb or prevent it. Here we have, I believe, the explanation of the nervousness and the irritability of exhausted states and of the insomnia of overfatigue. Moreover, it is extremely probable that excess of function, if persisted in, leads eventually to a perversion of the chemical changes that accompany normal function; and thus arises an additional element of toxicity. That tissue metabolism is actually deranged in **neurasthenia,** we shall presently see.

Permanent Structural Changes from Excessive Function

Persistent excess of function leads inevitably to morbid **organic changes.** These changes result from two causes: first, the direct effect of the excessive function upon the organ concerned; and, second, the toxic action of waste substances present in abnormal amount or changed in character. The reaction of nutrition which follows the excessive exercise of function leads at first to hypertrophy; but when certain limits have been passed, hypertrophy is followed by atrophy, by structural weakness, and by degenerative changes. The ordinary course of hypertrophy and subsequent atrophy in an overused muscle is a case in point; the dilatation, thinning, and weakening of the cardiac walls following a cardiac hypertrophy is another. The second cause, the toxic action of the waste substances, leads to degenerative changes in the circulatory apparatus, and possibly also in certain glandular structures, especially the kidneys. In other words, we have here an important factor

in the etiology of **arterial sclerosis** and probably also of some forms of **chronic nephritis.** At any rate, the relation which overwork and overstrain bear to degenerative changes in the blood-vessels and kidneys is well known. Finally, instead of being eliminated, waste substances may be deposited in the tissues, and we have here an explanation of some of the vague aches and pains from which neurasthenic patients suffer, and also of the uric acid, alloxuric or gouty, diathesis, so commonly met with among them.

CHAPTER II

CHRONIC FATIGUE: THE FATIGUE NEUROSIS

Primary or Essential Symptoms; Secondary or Adventitious Symptoms. Motor, Sensory, Psychic, and Visceral Phenomena.

In order that we may fully appreciate the **principles** upon which **rest** is to be applied as a therapeutic measure, it will be necessary for us to consider in detail the symptoms of **chronic fatigue.** As previously stated, the exercise of function is synonymous with the expenditure of energy and the consumption of tissue; it is evident, therefore, that the means of reconstruction of tissue is to be sought for in rest and in food. Nature determines these factors for herself when the consumption of tissue has been physiologic. It is otherwise when the consumption of tissue has been abnormal. In the demands that modern civilization makes upon the individual, the undue expenditure of energy that results in overfatigue is of frequent occurrence. As a result, a condition is established in which neither physiologic rest nor food suffices any longer to restore the organism to the equilibrium observed in health. Gradually a well-defined neurosis with a definite symptomatology becomes established, and this is widely known among the laity as 'nervous prostration' and among physicians as **neurasthenia.** Its symptomatology is essentially the symptomatology of chronic fatigue. So evidently is this the case that the affection well deserves the name of **the fatigue neurosis,** which I have on various occasions applied to it. There is no subject which is of greater practical importance and which at the same time is more neglected. One of the first statements that a patient suffering from this affection makes, is that he becomes tired much more readily than formerly. Often the slightest effort, whether this effort be physical or mental, results in exhaustion. Usually the feeling of exhaustion is general, but frequently it is referred to a certain part of the body, such as the head or back;

at other times it is referred to the arms or legs. The patient also complains of various aches which suggest closely the achings observed in normal fatigue. In addition, there are digestive and circulatory disturbances, all of them characteristic of impaired nervous energy. Very frequently, too, symptoms are observed which do not appear at first sight to be indicative of fatigue; thus, the patient may complain of dizziness, throbbing in the head or vibratory sensations in the limbs, or of tinnitus or other strange sensations.

Grouping of Symptoms

As I have elsewhere pointed out, the symptoms of neurasthenia resolve themselves into two great groups: First, those which belong essentially to the affection and which always present the phenomena of chronic fatigue; secondly, those which are adventitious or secondary outgrowths of various disturbances of function, themselves symptomatic of fatigue. The first, I have termed **primary** or **essential** symptoms, and the latter, **secondary** or **adventitious** symptoms. Viewed in this light, the symptomatology of neurasthenia becomes clear and readily comprehensible. The primary or essential symptoms manifest themselves as weakness and irritability of various functions, whether these be motor, sensory, psychic, or visceral. Thus, the patient almost invariably complains of **muscular weakness,** which in the majority of cases can readily be demonstrated to be real. When tested by the dynamometer, it is usually found that the grip is weak. Occasionally, however, the grip at first seems to be normal, but if the patient be made to repeat the test a number of times in succession, we find that the grip rapidly grows weaker. In other words, we can easily establish the symptom of ready exhaustion. The various statements which the patient makes are in keeping with this finding. He will state, for instance, that slight efforts at walking induce great fatigue, or that slight muscular exercise of any kind rapidly exhausts him. Most frequently the weakness is referred to the legs and back, but occasionally it is referred to the arms. Decided local weakness in one arm or one leg is occasionally complained of, and is then usually due to some peculiarity of occupation. However, if local weakness be decided, we should at once suspect organic disease, hysteria, or an occupation

neurosis. The weakness of neurasthenia is always more or less general, and this fact cannot be too strongly insisted upon. We should also remember that paralysis never occurs in neurasthenia.

Associated with the symptoms of general muscular weakness we not infrequently find **muscular tremor.** It is a rather fine intention tremor, and may be elicited by having the patient extend his hands and fingers. While usually limited to the hands, it may be widely diffused over the muscles of the limbs, especially in neurasthenia of traumatic origin. At times, too, spasmodic and irregularly recurring contractions of small bundles of fibers, either in the trunk muscles or in those of the face and extremities, are observed. Thus, slight spasms or twitchings are occasionally seen in the orbicularis palpebrarum, in the fibers of the frontalis, and elsewhere about the face. Occasionally twitching may also be noted in the muscles of the extremities, more particularly in those of the calf.

The muscular weakness observed in neurasthenics is evidently a primary symptom,—one that is characteristic of fatigue,—while the tremor and muscular twitching now and then observed are to be regarded as adventitious or secondary symptoms. While in themselves not indicative of fatigue, they are direct outgrowths of the fatigue of the muscles.

When we examine the knee-jerks of neurasthenic subjects, we find that in the majority of cases they are decidedly exaggerated. **Exaggerated tendon reaction** is also noted elsewhere; thus, in the tendons of the triceps and of the biceps and in the various tendons of the wrists. Often, a disappearing ankle clonus may be present. Evidently the exaggerated tendon reactions met with in neurasthenia are to be regarded as primary symptoms. They are the phenomena of motor irritability associated with motor weakness; irritability and weakness always being associated in neurasthenia. It should be added, however, that in some cases we find that the tendon reactions, though exaggerated, become rapidly less pronounced when the attempt is made to elicit them repeatedly in rapid succession. In other cases, again, the knee-jerk is found to be normal or even less than normal—this diminution of activity doubtless being due to a

decided lowering of the general muscular tone. Even absence of knee-jerk is met with. In such case, however, we find that it can readily be obtained by Jendrassik's method of reinforcement. However, should the knee-jerk after repeated effort at reinforcement remain absent, other symptoms pointing to actual organic disease of the cord or other portions of the central nervous system, should be sought for. It should also be added that the tendon reaction in nervous prostration varies at different times. Thus, it is markedly increased by excitement. Increased irritability of the muscles to percussion may also be observed, and in rare instances, light tapping even of the nerve-trunks will produce slight contractions of the muscles which they supply.

In addition to the muscular and tendon phenomena presented, the patient complains of various **abnormal sensations.** These range from vague generalized feelings, often incapable of description, to others which are definite in character and localized in certain portions of the body. Usually the complaint will be merely of a general feeling of fatigue or of a sense of more or less marked exhaustion. Not infrequently this feeling is obscured by special symptoms to which the patient gives prominence. For instance, he may complain of lightness or of a sense of constriction or of pressure in the head. At other times he may complain that his head or his arms or legs feel heavy and that he must make a special effort to move them. Sensations of pressure or constriction may also be referred to certain portions of the trunk or to the limbs, though they are not common in these situations.

By other patients, a feeling of **uncertainty in moving about** is complained of. Sometimes they complain of being giddy, but actual vertigo is rarely, if ever, observed. The giddiness appears to be due to lessened vasomotor control of the cerebral vessels, so that slight motion or change of posture influences the intracranial circulation. Objective vertigo is, however, rarely, if ever, observed, though in a neurasthenic patient the sense of uncertainty may be so great that he grasps at surrounding objects when in reality there is no danger of falling. True staggering and incoordination of movement are rarely observed. Objective vertigo when present in

neurasthenia is usually associated with concomitant gastric symptoms or ocular disturbances. It may be continuous, and in that case neurasthenic giddiness is a very distressing symptom. It may be excited by mental or physical effort, such as reading and writing, or by such slight causes as motion in bed or the taking of food. The generalized sense of fatigue is to be regarded as a primary or essential symptom, while the lightness of the head, the various constricting sensations, and the giddiness, are to be looked upon as secondary or adventitious phenomena,—not in themselves essential constituents of neurasthenia, and not always present.

In addition to these primary and secondary symptoms, the patients complain of various **pains** which affect the head, the back, or the limbs. They are described generally as dull and diffuse pains or aches which in the severer forms suggest the sensations of simple fatigue; and it is extremely probable that even when they are most pronounced, they are merely exaggerated fatigue sensations. **Headache** is one of the most common of these symptoms. When present in the milder degree, it is described simply as a dull feeling or dull aching. As a rule, it is not diffused over the entire head, but is referred to the occiput and the upper part of the back of the neck or to the brow, just above the eyes. Occipital headache is, however, by far the most frequent form of headache met with in neurasthenia. Very commonly this occipital headache is associated with a sense of pressure, or even with a feeling of constriction passing around the entire base of the cranium. The headache of neurasthenics, when mild, usually disappears upon the mere cessation of work. When pronounced, however, it may become very persistent and may not be relieved save by prolonged rest in bed. Care should, of course, be exercised in regard to persistent forms of headache, to differentiate closely the headaches of neurasthenia from those due to special causes, such as eye-strain. Migraine, which not infrequently complicates neurasthenia, is recognized by the facts that it occurs in paroxysms, that it affects merely one side of the head, and that it is associated with disturbances of the sympathetic nervous system—such as flushing or pallor of the affected side, contraction or dilatation of the pupil; as also by the occurrence of various prodromal symptoms.

Next in frequency to headache, **backache** is complained of. It is most frequently referred to the small of the back, though occasionally to the mid-scapular region or to the sacrum. It is typically a fatigue sensation, dull and diffuse in character, and varies greatly in degree. It is sometimes relieved by lying down and resting. Frequently it is severe and continuous. It is brought on or made worse by exertion.

Instead of or together with backache, there may be aching in one or more limbs. Like the headache and backache, this **limbache** is dull and diffuse. Frequently it bears a direct relation to the occupation of the patient. Thus, in a collector, who was in the habit of walking great distances daily, the fatigue sensations were most pronounced in the legs. In a physician who used his right hand for many hours daily in laryngeal manipulations, the fatigue sensation was accentuated in the right arm. In another instance, a young woman who stood behind a counter for many hours daily developed an aching in the legs, and for a long time this symptom was so pronounced as to be the most prominent feature of her case. I have met with several cases in which aching in the arms, most painful and persistent in character, developed as a result of excessive piano practice. Not infrequently the aching is accentuated in, or limited to, one arm, and in such cases error in diagnosis is not infrequently made. Occasionally the distress is referred to a joint or, more accurately speaking, to the neighborhood of a joint, and in such instances care should be taken that pain be not mistaken for rheumatism, organic disease, or hysteria. I recall the case of a young man who presented himself with a persistent aching in the right wrist. Examination failed to elicit increased pain on motion or other evidence of joint affection. Evidences of hysteria were also wanting, but the general examination of the patient elicited various signs of neurasthenia. Finally it was learned that his occupation was that of a pocketbook-maker and that he used his right hand and wrist all day long in folding small pieces of leather. The absence of muscle weakness and muscle spasm, as well as the subsequent history of the case, proved that the pain was a fatigue sensation. Sometimes associated with the backache or limbache there is a feeling of tremor, of fine thrill or vibration which pervades the

spine, the back, the trunk, or one or more limbs, as the case may be. Sometimes it seems deep-seated, and at times, when situated in a limb, it may be accompanied by a fine visible tremor. At other times when it is not evident to the eyes, a tremulous sensation may be communicated to the hand of the observer on grasping the limb. It should be added that sometimes the sensation of trembling, thrilling, or purring is present when aching is absent.

In addition to the diffuse aches and other sensations thus far described as characteristic of the fatigue neurosis, **special sensory disturbances,** painful in character, may also be met with. First among these is **spinal tenderness,** so-called spinal hyperesthesia. In many cases of neurasthenia, though by no means in all, we find that the patient flinches when we pass the finger, even though we do so lightly, over the spinous processes. The patient acts as though the spine or the skin above it were tender. Rarely this tenderness extends along the entire spine; more frequently, however, it is limited to small areas. These are found chiefly in certain situations, for example, over the seventh cervical vertebra, over the mid-dorsal region, dorso-lumbar juncture, the sacrum, or the coccyx. The affected area is usually quite small; frequently the painful spot can be covered by the tip of the thumb. Occasionally, however, the tenderness is more widely diffused, and there may also be present spontaneous pain which seems to be deep-seated and burning in character. This spinal hyperesthesia or **spinal tenderness,** as it is termed, is clearly a secondary or adventitious symptom. Less frequently, areas of hyperesthesia are found over the back, the sides of the trunk, the front of the chest, the epigastrium, or the extremities. At times the scalp is exquisitely sensitive; at other times the face, the teeth, the gums, the nipple, or the testicle may be hyperesthetic. Frequently there is also a hypersensitiveness to pain, slight injuries causing a grossly disproportionate amount of suffering.

A subjective sense of **numbness** is also frequently present; as a rule, it is referred to a limb. Its onset is favored by cramped or fixed positions, by garters, tight sleeves, constriction about the neck, or other local constraint or pressure. Actual anesthesia is, as might be expected, never observed. Sometimes disturbances of

sensibility, which are described as prickling, creeping, or velvety sensations, are present. These, together with the numbness and tremor-like sensations, are to be classified with the secondary or adventitious phenomena.

Neurasthenics present, in addition, various disturbances of the **special senses,** which are all of them indicative of fatigue. Thus, patients will complain that they are not able to read for more than a few minutes at a time because of the blurring of the letters that ensues, or because of the headache that is produced. This symptom of fatigue, induced with abnormal readiness, may be due to exhaustion of the accommodative apparatus of the eye, exhaustion of the retina, or exhaustion of the cortical centers; most frequently it is due to all of these factors combined. In addition, symptoms of irritability, such as hyperesthesia of the retina, may be present. The latter frequently leads the patient to protect his eyes against the light by the use of smoked glasses. Various anomalous symptoms may also be present, secondary or adventitious in value. Thus, patients sometimes say that everything appears misty or as though seen through a veil; or that objects look dull or excessively bright, or that near objects look as though far away or appear excessively small or excessively large. These curious anomalies of sensation are to be referred to the disturbed nutrition of the retina, but more especially to the disordered condition of the nerve-centers. Frequently they unduly alarm the patient.

The sense of hearing presents symptoms comparable to those presented by the sight. Patients frequently complain that they cannot hear properly; that they do not understand what is said to them; though the fatigue in this instance is probably cortical and not peripheral. Auditory hyperesthesia is more frequently met with. Neurasthenic persons are usually very sensitive to sounds; they may suffer exquisitely from noises, even when the latter are insignificant. Tinnitus is also very common. These are undoubtedly adventitious symptoms. Disorders of smell and disorders of taste are also present in neurasthenia. Olfactory hyperesthesia, together with paresthesias or perversions of taste, are the more common symptoms. They need not be considered in detail here.

The **psychic disturbances** of chronic fatigue are also exceedingly interesting and significant. At the very onset we have the symptom of ready mental exhaustion,—of marked diminution in the capacity for sustained intellectual effort. The attempt to do mental work brings on more or less rapidly the signs of fatigue. Soon there is difficulty in sustaining and concentrating the attention, and at the same time there is a marked diminution in the spontaneity of thought. When the condition is pronounced and confirmed, the patient becomes irritable, nervous, lacks confidence in himself, may betray indecision regarding trivial matters, and is often emotional to an unusual degree. His equilibrium is readily disturbed; a play at the theater or a newspaper account of a murder may move him to tears, or a trivial incident may provoke unusual annoyance or anger. Other symptoms, secondary or adventitious in character, may also be present. Thus, there is a tendency to introspection, noticeable in a large proportion of cases; the patient is habitually on the alert for his symptoms and constantly alive to his illness.

Again, he may present the symptom of an unusual **fear.** Fear and weakness are quite closely associated, and it is not surprising that a person in a condition of chronic exhaustion should be morbidly afraid. The symptom may manifest itself in several ways. There may be present a vague generalized sense of being afraid or there may occur, without obvious exciting cause, attacks during which fear becomes, for the time being, greatly accentuated. There is usually palpitation of the heart and sudden muscular weakness. The patient may sink into a chair or even to the ground. The face becomes pale, the body moist with a cold sweat, the pulse small and rapid, and the respiration hurried; and, if the attack be intense, there may be even relaxation of the sphincters, the bladder and bowels being involuntarily voided. Such attacks, though not common, nevertheless recur with sufficient frequency to leave no doubt as to their nature. In many cases the fear assumes a special form and obtains only with regard to certain conditions. Especially is this the case if, besides being neurasthenic, the patient be also neuropathic; that is, if there be present the elements of nervous degeneration, hereditary, congenital, or acquired. A pathologic association may under such circumstances be formed in the patient's mind, so that the emotion of fear becomes definitely

linked with certain relations to the environment. Thus, a neurasthenic-neuropathic patient may have an attack of spontaneous fear while he is alone; at subsequent times the mere fact of being alone induces an attack of fear, the attack being accompanied to a greater or less degree by all of the physical signs of the emotion. A patient so afflicted becomes morbidly afraid of being alone. Similarly he may experience fear when in the presence of strangers or of crowds; or he may be attacked by fear when in his own room or when in the street. It is extremely probable also that in some cases of neurasthenia, the faculties are so weakened that the ordinary surroundings no longer give rise to a sense of security. Fear is then a natural consequence. To many of these special forms of fear, special names have been given. Thus, some neurasthenics are attacked by fear when they find themselves in open places—**agoraphobia**; in others, the fear comes on when they find themselves in narrow or closed places—**claustrophobia**; the fear of being alone is termed **monophobia**; the fear of crowds, **anthrophobia**, and so on. Among the secondary or adventitious psychic phenomena of neurasthenia must likewise be included the **sleep** disturbances. Insomnia is one of the most common of these. The patient has difficulty in falling asleep or falls asleep readily but awakens at short intervals throughout the night, or awakens at an early hour in the morning, and finally leaves his bed in the morning unrefreshed and exhausted. Distressing dreams may also be present; murders, horrible occurrences, falls, and accidents distress him, and not infrequently he awakens suddenly in a paroxysm of terror.

Just as the various motor, sensory, and psychic phenomena are indicative of chronic fatigue with its outgrowth of secondary symptoms, so also are the various **visceral** disturbances. Space will not permit me to discuss these in detail. I can only indicate them briefly. Thus, the digestive disturbances of neurasthenia are primarily those of weakness. The patient having taken a moderate quantity of food feels at first no distress, but after the lapse of a longer or shorter interval of time, sensations of weight, of oppression, and of general discomfort in the epigastrium make their appearance. The symptoms are at first merely those of delayed digestion. Later,

as the neurasthenia becomes more pronounced, they become greatly accentuated, and may also become complicated by a gastric catarrh; the latter, again, constitutes an adventitious or secondary symptom.

When we examine the action of the **circulatory apparatus** in neurasthenics, we find, as before, the symptoms of weakness and irritability. They consist in modifications of the force and rhythm of the heart's action, in the character and frequency of the pulse, and in more or less marked alteration of the vasomotor tonus. The most striking, and indeed the most common, circulatory disturbance in neurasthenia is palpitation of the heart; at other times a more or less persistent tachycardia is present. Another very common symptom of vascular weakness is coldness and, in marked cases, lividity of the extremities. Among the secondary vascular phenomena are found aortic pulsation and marked irregularity of the vasomotor apparatus as evidenced by local pallor or flushing.

We might follow out in turn the various phenomena presented by the **secretions** as well as by the **sexual** functions, but it must suffice for our present purpose to say that these symptoms, in turn, are typical of chronic fatigue with its weakness, its irritability, and its associated secondary phenomena.

The facts set forth in foregoing paragraphs sufficiently justify the application of the term 'the fatigue neurosis' to neurasthenia; and it is the application of the principle of rest to this condition that will first occupy our attention.

CHAPTER III

REST IN NEURASTHENIA AND ALLIED STATES

Physiologic Rest. Therapeutic Rest. The General Application of Rest: Degrees of Rest; Exercise and Food. The Special Applications of Rest: Partial Rest Method—Division of Time; Bathing; Massage; Modification of Routine. Absolute Rest Method—Importance of Details; Isolation; Nursing; Adjuvants—Feeding, Bathing, Massage, Electricity, Medicines; Treatment of Special Symptoms; Return to Home. Historical Data—Whyte; Bouchut; Beard; Weir Mitchell. Rest in Neurasthenia Terminalis. Rest in the Neurasthenia of Middle Life. Rest in the Neurasthenia of Old Age. The Neurasthenoid States. Neurasthenia Symptomatica.

We have considered the changes—chemical, morphologic, and physical—that take place in **normal fatigue,** and we have seen how, in the intervals between the periods of activity, **restitution** takes place. In fatigue, for instance, there is, among other things, loss of substance, and during rest this loss is regained. The relation of rest to normal fatigue is quite clear; but this is not the case when the fatigue is pathologic, as we find it to be in neurasthenia. Here physiologic rest no longer suffices to bring about a return to the normal condition, and we are at once confronted with the problem of applying **rest as a therapeutic measure.** How and to what degree shall it be applied? As we shall presently see, rest is a powerful agent, and yet when inappropriately applied, may fail of its object.

REST AS A THERAPEUTIC MEASURE

Elimination of the Causal Factors of Chronic Fatigue

The first practical step toward a successful result in a given case is a careful study to determine the **factors at work** in producing the fatigue symptoms. If the case be one of simple and uncom-

plicated neurasthenia, it will generally be found that the symptoms owe their origin to some infraction of physiologic living. In the civilization of our day, no cause is more potent than **overwork** and **nervous overstrain.** In many cases, if merely so much of the strain be taken off as is in excess of the patient's strength, nature will gradually re-establish a normal equilibrium, provided, of course, that the overstrain has not been too long continued. In searching for the cause of a neurasthenia, all of the possible etiologic elements should be inquired into, and in this connection we should remember not only overwork, but also **worry, sexual excess,** and the **abuse of stimulants.** It can readily be comprehended that rest of itself may fail to bring relief, so long as the various unphysiologic strains to which the nervous system has been subjected are not removed.

It is necessary, therefore, in order that rest shall be of benefit, that first of all the patient's **method of living** be carefully regulated and be placed as nearly as possible upon a normal plane. Under such circumstances, merely **physiologic rest**—that is to say, a normal amount of sleep and the slight general rest obtained at the intervals in the work of the waking period that are necessitated by the taking of food, together with rest in the evening—will be followed by a disappearance of the fatigue symptoms. This is true, of course, only of conditions in which the symptoms of overfatigue have not been too long established, and in which they have not become too profound.

Degrees of Rest

The foregoing remarks suggest at once that the term **rest,** in a therapeutic sense, has a very wide range of application. Indeed, the cessation of activity thus implied may be made very slight in degree or it may be made almost absolute. On the one hand, we have that slight degree of rest which is obtained by the elimination of so much of the usual work as is excessive—overwork—or by the elimination of unphysiologic strains; and, on the other hand, the profound degree of rest that is obtained by placing the patient in bed and under such rigid conditions that a minimal amount of activity either mental or physical is alone possible.

Relative Rest.—Under slight rest, it is of importance to mention

that **relative rest** which is obtained by mere **change of occupation,** or by the introduction of **diversity** into the occupation. Change and diversity give rest to faculties that are exhausted and stimulation to others that are insufficiently used. The greater the contrast between the kinds of work, the greater is the advantage gained. For example, a man suffering from overwork of the brain is greatly benefited if a portion of his daily labor be converted into out-of-door work of such kind as necessitates physical exertion. When such a change is not possible, advantage may even be gained if the brain-work itself be modified in kind or manner; as, for instance, when dictation is substituted for writing, or when the details and drudgery of business, professional duty, or clerical tasks, are made to vary decidedly at different hours of the day. One reason why physicians maintain so large an average of general health under excessive strain, is the great variety of the labor that is incidental to their calling. Unfortunately, in our present stage of civilization, it is not often possible to institute much change in the character of the work that a given patient has to do, and 'relative rest,' so called, has a very limited application.

Exercise and Food

The reader has probably inferred from what has thus far been said, that the principles of rest are closely linked with those of **exercise.** This is indeed true. Exercise, stimulation of function, in some form or other, even in the most rigid form of rest treatment that can be instituted, is, as we shall see, absolutely necessary. Further, if we recall that overfatigue implies loss of substance,—and it should here be interpolated that neurasthenic patients are, as a rule, below weight,—we also realize at once that we must attach to the principle of rest, not only the principle of exercise, but also the principle of **feeding.** We must supply, in addition to rest and exercise, pabulum in some form by which the exhausted tissues can be reconstituted. This principle is all-important; and it cannot be emphasized too strongly that the furnishing of the pabulum can be accomplished only by the administration of food. It is because this fact is not fully recognized that physicians often fail in their treatment of neurasthenic patients. Medicine cannot form tissue,

and the various artificial foods and so-called reconstructives that are foisted upon the market have but slight, if any, tissue-building value. It is **food,** normal food, that is required,—food so administered as to be capable of ready digestion and ready assimilation. The much-vaunted specialties of the pharmacist, the so-called nerve-foods, such as the hypophosphites of lime and soda, or the various predigested preparations of the meats and cereals, are but insignificant and feeble adjuvants in the feeding of neurasthenics; under the conditions in which we find the average neurasthenic patient, they are practically valueless. Indeed, I do not hesitate to say that there is rarely a scientific reason for using them. It is food that is required,—food in bulk, not teaspoonful doses of this or that preparation. The administration of food to neurasthenics often presents problems of difficulty so serious that at first sight they may seem almost insurmountable, but the difficulty, no matter how great, does not justify us in losing sight of the fact that food must be administered, and not some makeshift and delusive substitute.

At the very outset, then, of our consideration of the general application of rest, we find that rest is of necessity linked with two other factors—namely, **exercise** and **food.**

THE SPECIAL APPLICATION OF REST TO NEURASTHENIA

Partial Rest Methods

It so happens that for a large number of our population an elaborate treatment of neurasthenia by rest in bed for a prolonged period is impracticable, if not impossible. This is true especially of male neurasthenics who are actively engaged in business, as also of many women—mothers and housewives—whose obligations and responsibilities cannot be laid aside or whose circumstances negative the bed method of treatment. In such cases it is obviously necessary to institute a plan of treatment that will embody the general principles of rest, exercise, and food without interfering unduly with the patient's vocation. In other words, the patient is placed on a **partial rest** treatment. General rules only can be discussed here. The details will necessarily vary greatly in each case.

Proportion of Rest and Exercise

Let us take, to begin with, an instance in which a patient, a woman, is unable to abandon her home and children and yet is urgently in need of rest. The physician should first acquaint himself as fully as possible with the various details of the patient's daily life. By this means he will be able to separate the various duties of the patient into two groups—those which are or seem to be indispensable, and those which she can readily abandon. Among the first are, as a rule, duties intimately connected with housekeeping and the care of children. Among the others are social duties, not merely participation in social functions, but also in the work of charitable and other organizations, church work, unnecessary correspondence, and the inevitable late hours that social obligations entail. The necessity of abandoning all but the most imperative cares must be pointed out to the patient. Her consent having been gained, the next step is to increase the number of hours spent **in bed.** The patient should go to bed early, say at nine o'clock, and not rise earlier than ten or eleven o'clock the next morning. In addition, she should again retire immediately after her mid-day meal, remaining in bed for from one to two hours. In this way from fifteen to sixteen hours, out of twenty-four, are spent in lying down, many of them in actual sleep. A certain amount of complementary **exercise** must now be provided, and this exercise should be taken in the open air. It may consist at first merely of a twenty-minute walk taken between the hours of eleven and one, or between the hours of three and five. Gradually the amount of exercise should be increased until the patient is walking upwards of an hour once, or it may be twice, daily. In my observation, the error is frequently made of directing the patient to take too much exercise at first. It cannot be too strongly insisted upon that the amount of exercise should in the beginning be very small. Very little exercise will suffice, while much inevitably does harm. Later on in the treatment, the exercise cannot only be increased but elaborated at will. An important guiding principle, however, should be borne in mind. The exercise should always stop well within the limits of the patient's strength. Especially in the early stage of the treatment, should it stop far short of fatigue. If fatigue be induced, the very object

of our treatment is defeated. The neglect of this elementary principle leads not only to failure, but frequently to positive harm to the patient.

Details of Feeding

Having carefully prescribed the number and duration of the periods of rest and the extent and character of the exercise to be taken for the time being, we should next turn our attention to the question of **food.** From what has already been stated, the reader will realize that the amount of the food must, if possible, be large. Secondly, it must be adapted to the peculiarities of nutrition observed in neurasthenics; and, finally, inasmuch as digestion in neurasthenics is enfeebled and delayed, the food should be prepared and administered in such a way as to facilitate digestion and assimilation. Further, in very many cases, a gastric catarrh, usually slight though sometimes pronounced, complicates the neurasthenia and must also be taken into account. The quantity of nourishment that is already being taken can, as a rule, be increased by a very simple expedient. The patient is instructed to add a definite quantity of **milk**—say from four to six ounces—to each meal and to drink an equal quantity between meals and on going to bed; that is, she should be instructed to take a prescribed quantity of milk six times daily. The amount can gradually be increased until eight, ten, or even more ounces of milk are taken at each feeding. Neurasthenic patients frequently object to milk, asserting that it 'disagrees' with them, that it coats the tongue, that it constipates them, or that it makes them flatulent. All of these difficulties can be overcome by various expedients which will be considered in detail in speaking of the treatment of neurasthenia by rest in bed (see page 56). Suffice it to say here that the generality of patients treated by simple increase of the hours devoted to rest and by exercise in the open air can, as a rule, be brought to digest and assimilate milk readily. Having impressed upon the patient's mind the necessity of taking milk, the next point it to give some general directions with regard to the **diet as a whole.** Red meats—beef and lamb—are, as a rule, not suitable for neurasthenic patients. In neurasthenia, as has been pointed out, either the output of alloxuric bodies is increased or their

elimination interfered with, so that a diet including meat in large quantities is counterindicated. Starchy foods and sweets are also to be avoided: first, because indirectly they favor the formation of alloxuric bodies; secondly, because they give rise to more or less marked digestive disturbances; and, thirdly, because their nutritive value is comparatively low. In regard to **meats** we should therefore advise the patient to take the red meats, beef and lamb, sparingly. In my experience it is not wise to withdraw them absolutely in the case of patients that are not treated by rest in bed. A certain quantity of red meat is needed, but it should not be taken at more than one meal in a day, and then only in moderation. For a similar reason, the **starchy foods and sugars** should not be withdrawn absolutely, but their quantity should be regulated. Potatoes and ordinary wheat-bread can usually be dispensed with entirely, with advantage. Rice, in moderate quantity, will be found to be a convenient substitute for potatoes, while whole-wheat bread, pulled bread, bran bread, gluten bread, wafers, Zwieback, will be found to be exceedingly serviceable in the place of ordinary wheat-bread. **Fats** should be avoided for a time, and the patient restricted to small quantities of butter. The **white meats,** fish, chicken, oysters, and the like, should be taken freely, as should also the **succulent vegetables.** Celery, lettuce, and water-cress, and **ripe fruits,** except perhaps bananas, should be added. When constipation is a feature, stewed fruits and baked apples, without much sweetening, are of service.

A diet such as that outlined will answer the purpose well in the average case; but some modifications may be necessary to meet individual requirements. We should remember that the physiologic needs of the patient call for a **mixed diet,** and experience shows that this yields the best result. When difficulties of digestion are marked and decided gastric complications exist, a rigid dietary should of course be prescribed in accordance with the indications of the special symptoms. It should not, however, be adhered to too long, lest the ultimate purpose of treatment be defeated. We should remember that liberal feeding, **feeding in excess,** is what is indicated. The diet here outlined is intended for that large number of neurasthenics who cannot resort to a bed treatment or whose condition is not so pronounced as to justify resort to more radical measures. In

discussing the full bed treatment, various modifications of its plan and substance will be considered. It is important to add here that the **intervals** between the taking of food should not be too long. The strength of the patient frequently runs down in the long hours between the regular meals, and to give a small amount of food during these hours proves a very valuable expedient. Further, the plan which is now followed so commonly in American families in cities, of converting the mid-day meal into a lunch, reserving the heavy meal or dinner for a late hour of the day, and having the latter take the place of the old-fashioned supper, is decidedly unphysiologic. The mid-day meal should, so far as neurasthenics are concerned, be the most substantial meal of the day. The depression of strength, which is apt to come on in these patients in the latter part of the afternoon, in the neighborhood of four or five o'clock, can frequently be avoided by this means.

The Auxiliary Use of Medicines

The treatment of many cases of neurasthenia can be conducted from beginning to end without the use of any **medicines.** Occasionally, however, because of the atony of digestion, a few drops of the tincture of nux vomica, given before meals,—alone or with a little tincture of gentian and of cardamom,—will be of service. At other times if gastric catarrh be a factor, a small quantity of bismuth subnitrate can be given before meals; or if the gastric catarrh be pronounced, silver nitrate may be administered in pill form—one-fourth grain of the silver salt with one-fourth or one-half grain of extract of hyoscyamus, twenty or thirty minutes before meals. Should constipation exist, a dose of an effervescent preparation of sodium phosphate, equivalent to about a dram of the active agent, given before breakfast, will prove useful. At other times small doses of fluid extract of cascara may be used—from eight to fifteen drops three times daily after meals. It is not usually of advantage to order this remedy to be taken in one dose at bedtime; its action is most satisfactory when diffused over the twenty-four hours. It is tonic and stimulating to digestion, and after bowel movements have once been regularly established, it may gradually be diminished and finally withdrawn altogether. In regard to other medi-

cines, let me repeat that while some are indicated from time to time, they are never more than adjuvants to the general treatment, and too much reliance should not be placed upon them. A treatment based upon tonics, drugs, and artificial foods will inevitably fail unless the general principles here indicated be applied. As a rule, these remedies do harm not so much of themselves, but because the patient, and I am sorry to say sometimes the physician, deludes himself with the belief that the taking of the medicine constitutes the essential part of the treatment; thus, the really important measures are not carried out, or possibly not even attempted.

The Elimination of Waste Products

We have now considered the application of rest with its concomitant principles of exercise and increased food. Two other points, however, remain, which demand our attention. The **elimination of waste products** is, as we have already pointed out, generally diminished in cases of neurasthenia. It is therefore of the utmost importance that this elimination be stimulated. Many of the vague aches and distressing sensations from which neurasthenic patients suffer, are due to the retention of waste products, notably uric acid and its salts, or perhaps, one should say, more generally, the alloxuric bodies. So far as possible, we should add to the plan of living, simple methods by which the elimination of these substances may be facilitated. Obviously one of the first indications is to increase the amount of **liquid** which the patient takes. In my personal observation this is a point which physicians too commonly neglect. Its importance becomes especially evident when we remember that neurasthenic patients suffer almost always from defective thirst, and that if left to themselves they habitually drink but little water. It is necessary not only to instruct them to drink water, but also at times to fix the quantity, usually a liberal amount, which they are to consume at stated periods daily. The various table waters may here be prescribed with advantage (see volume IX). The output of urine is by this means decidedly increased. The free addition of milk to the diet, in the manner previously indicated, often accomplishes the same object and renders the addition of water in large quantities less imperative. However, even under these circumstances

the patient should be instructed to drink one or more glasses of water between meals.

Stimulation of the Skin.—In accordance also with these general principles, the function of the **skin** should be stimulated as much as possible, and this can be accomplished very readily in most cases by a liberal use of **baths** and by simple **rubbing.** We should be careful, however, not to use baths so freely as to exaggerate the general weakness and relaxation from which the patient already suffers. As a rule, the use of a simple sponge bath daily, followed by gentle friction, is all that is required. A rapid immersion bath or, if the patient's home facilities afford it, a shower-bath of short duration will answer the same purpose. The **temperature** of the bath is a matter of considerable importance. As already pointed out, the circulation of neurasthenics is feeble, the extremities are apt to be cold and livid, and the result is that they do not, as a rule, react well to cold baths. As a matter of actual experience, it is found that the sponge bath taken with water as warm as the patient can bear, the bath not extending over more than eight minutes and followed by gentle but efficient rubbing, is productive of the best results. The bath should be taken in the evening shortly before retiring. At this time it aids in relieving the fatigue of the day and also quiets the patient and prepares him for sleep. In comparatively mild cases of neurasthenia cold water is well borne and followed by a healthy reaction, but in most cases the warm sponge bathing or gentle douching is preferable. The fact that the warm bath favors sleep is of great advantage when we remember that many neurasthenic patients suffer from insomnia in some form or other. (See also volume IX.)

Modifications of Routine

The application of rest is, as we have seen, inseparably connected with the employment of exercise, full feeding, and bathing. I need hardly point out that any one of these adjuvants of rest is capable of very great **modification,** and that indeed, in special cases, decided modification of the principles here outlined is indicated. In place of the simple **exercise** of walking, elaborate forms of exercise may be substituted or may be added as the patient improves in strength.

Horseback-riding, golf playing, or other out-of-door sports, provided they do not tax the energies of the patient excessively, may be advised from time to time; or the patient may be placed in the hands of a competent physical instructor and a certain amount of time spent in gymnasium work. (See also volume VII.)

The **feeding** of the patient is likewise capable of great modification, as we shall presently learn in considering the full rest treatment. For instance, in cases in which a marked idiosyncrasy exists with regard to milk, raw-egg feeding may be substituted; raw eggs in a definite and increasing number being added to the daily diet of the patient. Various other modifications both as to the character and the intervals of the feeding may of course be employed (see p. 40; also volume VI). In regard to **stimulants,** alcohol, tobacco, tea, and coffee are best withdrawn absolutely, and yet if the patient be placed under such circumstances that he cannot lessen his work, that he is burdened with imperative engagements,—carries great responsibilities which must be discharged,—the morning cup of coffee may often wisely be allowed, or if marked digestive disturbances exist, a cup of tea may be substituted. As a rule, however, the coffee can be withdrawn and replaced by a cup of cocoa or hot milk. In neurasthenics who are in middle or advanced life and who have been accustomed to a moderate use of stimulants, it will perhaps be wise to permit the use of a small quantity of claret or some generous red wine, such as Burgundy, at dinner. As a rule, however, neurasthenic patients are very susceptible to the ill effects of alcohol. It makes them dull and heavy and renders the discharge of their duties more difficult. On general principles, tobacco should also be withdrawn entirely; in many cases, however, especially in persons who have been smokers for many years, it may be most judicious to cut down decidedly the amount of tobacco that is being consumed but not to interdict its use absolutely.

If our patient be already so neurasthenic that sufficient exercise cannot be taken, it is a good plan to employ **massage.** Massage may in a sense be defined as a form of exercise in which the patient plays a purely passive rôle; it is an expedient which produces effects

somewhat similar to exercise without necessitating the expenditure of energy on the part of the patient. It stimulates the circulation, promotes nutrition, without inducing fatigue, and it is therefore a most valuable expedient as an adjuvant to rest. However, in the class of neurasthenics that we are at present considering, it may be dispensed with, provided the patient is able to take sufficient exercise. It cannot by any means be regarded as the equivalent of exercise, and, other things being equal, it is distinctly inferior in its beneficial effects. It is sometimes of advantage to employ both exercise and massage in the same case at different periods of the day. At other times, again, associated with the massage, there may be given passive movements of the limbs or occasional movements with resistance. The employment of massage and the details of its application must depend largely upon the judgment of the physician. Both it and exercise may of course be modified, elaborated, and varied in numerous ways. (See volume VII.)

It is hardly necessary to say that the **bathing** of the patient, like the massage and exercise, may be modified in many ways. The primary effect of the application of water is of course to cleanse the skin, while the subsequent rubbing with the towel flushes its capillaries. Both of these factors stimulate its excretory power, a function of great importance in neurasthenia, on account of the tendency to defective elimination, already commented on. Other effects are those dependent upon the temperature of the water and the manner of its application. Warm water will dilate the vessels, cold water contract them; powerful effects can be produced by these means. Many neurasthenics are, as already stated, so feeble that a cold bath will depress them, and in such cases simple warm sponge bathing is at first preferable. Gradually, however, the bath may be reduced in temperature, and finally there may be given a rapid bath of 60° to 50° F. (15.5° to 10° C.), which at this time is followed by a prompt and valuable reaction. The arterial tension, which is especially low in neurasthenics in the early hours of the day, is by this means raised; and many of the fatigue symptoms either disappear or are lessened for the time being. Tissue metabolism is also actively promoted, for observation has shown that there results from the

stimulus of the cold bath an increased consumption of oxygen and an increased elimination of carbon dioxid. Elaborate hydrotherapeutic apparatus is only infrequently at the command of the physician; but while desirable, it is not indispensable. The patient can usually bring about very satisfactory results by employing simple means at his own home. Thus, he can employ a sponge bath of suitable temperature or a rapid immersion bath may be used. Douching the trunk alternately with warm and cold water while the patient is standing in an ordinary tub is another simple expedient. A small section of garden-hose with a nozle or a sprinkler may be attached to the faucet of the bath-tub and may be used as a jet bath or rain bath. For descriptions of both simple and elaborate methods of hydrotherapy, the reader is referred to volume IX of this system; suffice it to indicate here merely the general principles which should guide the physician in the employment of water as an adjuvant to the treatment of neurasthenia by rest. Bathing, as already stated, should always be used in some form; and it may be repeated that we should begin by some simple and gentle application, such as a **warm sponge bath.** Neurasthenics are made worse by measures that irritate and annoy, so that vigorous douching or baths that are too cold may depress and exhaust the patient, especially in the early part of the treatment. Later, **douching** and **cold bathing** may be employed with good result. If there be marked dryness of the skin or persistent fatigue pains, a **dry hot-air bath** (Turkish bath) or a **hot vapor bath** (Russian bath) may be given. When obstinate insomnia exists, a **hot wet pack** may be useful; the patient is wrapped in a sheet wrung out of water of a temperature of 110° F. (43.3° C.) and allowed to remain in it for an hour. Procedures such as these, however, are generally unnecessary. As a rule, simple sponge bathing will answer the purpose from the beginning to the end of the treatment.

Cautions Necessary

We should remember that the cardinal principle in the management of neurasthenia is **rest,** and that exercise, bathing, massage, and electricity are merely adjuvants. Their relative importance is indicated by the order in which they are named. It is important,

first, that the patient who is resting should also exercise; next, that elimination and the circulation be stimulated by bathing. If these measures prove insufficient, massage, and later, electricity, may be employed. In the class of cases which we are at present considering, —that is, the neurasthenics who are to some extent pursuing their ordinary vocations,—electricity can generally be dispensed with. Further, we should bear in mind that the simultaneous employment of every one of the adjuvants to rest, may not merely stimulate nutrition, but may also induce fatigue. We must therefore be exceedingly careful not to use too many measures at one time, and not to use them too vigorously, especially at first. Exercise, for instance, should in the beginning be exceedingly simple; it should consist at first merely in walking. Secondly, it should always stop far short of fatigue. The last point is the secret of the proper employment of exercise in the treatment of neurasthenia and is too frequently lost sight of. Again, if instead of simple sponge bathing or douching, elaborate hydrotherapeutic measures be employed, we should not forget that even though the patient may react well, he may subsequently feel fatigued, and we can readily understand how the inappropriate or over-vigorous use of bathing may retard increase of weight and strength. Massage also is capable of doing harm if used unadvisedly; rubbing that is unduly severe or unduly prolonged may accentuate the very symptoms that we are endeavoring to remove. I have frequently observed cases of neurasthenia that were being overtreated—by unnecessary medication; or by excessive bathing; or by unnecessary or worrisome applications of electricity; but especially, by excessive exercise; less frequently by injudicious massage. Nature has a wonderful power of recuperation, and if she be wisely assisted and if the patient be placed in simple channels of physiologic living, all that is desired may be gained. Attempts to coerce or hasten the processes of nature lead to disaster. Time is a necessary element, and the patient should be made to realize that his improvement will probably be gradual, though it may be relatively rapid.

Whether **progress** in a given case is being made will depend upon two facts: first, upon the subsidence of the various fatigue symptoms; and, second, upon increase in the patient's weight. The

patient should be weighed therefore at intervals, say every fortnight. After a maximum amount of improvement has resulted from the plan of treatment instituted, it may be advisable to send the patient away for a short period. If possible, the patient should be accompanied by a trained nurse, one who is thoroughly familiar with massage and the various forms of physical exercise. The nurse should be fully instructed as to the details of the treatment, especially as to the proportionate time to be spent in rest and in exercise. As a rule, the amount of exercise during the convalescent period should be considerable. In men, the trip away from home, especially if it be during the busy season of the year, may be impracticable; frequently this is the case also with women. In the group of cases we have thus far considered,—namely, those whose affection is so mild that full rest treatment is unnecessary,—this trip away from home may usually be dispensed with.

The management of these relatively simple cases of neurasthenia is of the utmost importance. A very large number of them are not sufficiently ill to demand radical measures, and besides are compelled by the circumstances in which they are placed to meet the obligations of their livelihood. Their successful management is made up of a number of factors, each in itself apparently trivial, but which, when properly grouped, are most efficient in bringing about a restoration to health. The plan of increasing the number of hours spent in bed or in lying down was first instituted by S. Weir Mitchell and termed by him 'partial rest,' and we have seen how all the other measures—exercise, full feeding, massage, bathing, etc.—group themselves about this central idea. The treatment indeed resolves itself into an application of simple physiologic principles, of which rest is the most important factor.

RADICAL TREATMENT OF NEURASTHENIA BY REST IN BED

In addition to the large class of neurasthenics thus far considered, whose treatment can be successfully conducted without withdrawing them from their ordinary pursuits, there is an equally large number in whom the symptoms are so profound that the general measures

described will fail unless supplemented by some more potent restorative influence. The expedient of increasing the hours devoted to rest—prolonging the time spent in bed—is followed by no amelioration of the symptoms, and, moreover, fatigue is so pronounced that it is impossible for the patient to take any exercise no matter how slight. In some cases the neurasthenia has become so grave that even an inconsiderable exertion is followed by pronounced accentuation of the fatigue symptoms. Thus, the patient finds it impossible to walk or stand for even a brief period without inducing backache, or finds it impossible to use the eyes for never so slight a task without inducing headache. In other cases still, the tired-aches, the nervousness, and the other fatigue symptoms are so pronounced as to be continuous, incessant—and in such cases, rest, involuntary and imperative, is enforced by the very weakness of the patient and yet is not followed by amelioration. In such instances there is no choice but to insist upon the institution of a plan embodying continuous rest in bed, extending over a number of weeks and perhaps of months.

Importance of Details

This plan having been determined upon, it must be carried out radically; and the closest possible attention must be given to the execution of the details, lest the whole purpose of the treatment be defeated by some apparently trivial neglect. Every indication presented by the etiology and pathology of neurasthenia should be followed to the letter. If rest is imperative, it must be made as nearly absolute as possible. The **bed** upon which the patient lies should preferably be furnished with a firmly stuffed horsehair mattress, the latter being supported upon wire springs. As a rule, the patient is merely placed comfortably in the bed with the head resting on a low pillow. He—or she, for frequently it is a woman—is instructed to lie quietly and not to sit up in bed except for the special purpose of taking meals; nor is the patient to leave the bed except for the purpose of emptying the bowels or the bladder. Such a degree of rest maintained for a number of weeks is usually sufficient in ordinary cases. Every now and then, however, cases of neurasthenia are met with, which are so profound that the mere effort of

sitting up in bed to eat or of turning from side to side is sufficient to cause great distress. Such patients should, of course, be fed by the nurse, and when there is a desire to change the position in bed, should be gently moved by the attendant. Cases requiring such stringent measures as these are, however, infrequent.

Isolation.—The patient having been placed comfortably in bed, the question arises, Have we now complied with the first indication of the treatment? Not completely. It is necessary for the patient to have not only physical rest but also **mental rest.** The room should be as far as possible a quiet room; which means not only that noises should be excluded, but also that all sources of mental and emotional excitement should be excluded. For this reason it is absolutely necessary that communication with the outside world should be cut off, if not altogether, at least in a very large measure. This necessitates the exclusion of relatives and friends as well as the interruption of all correspondence. In other words, the patient should be **isolated,** and this isolation should be rigid in proportion to the severity of the case. Most patients who present themselves for rest treatment are so worn by the ordinary strains of life, social and otherwise, that they gladly acquiesce in the advice given them in this respect. Occasionally isolation is resisted by the patient, but this is more frequently the case in hysteria than in neurasthenia. Sometimes isolation is violently opposed by some unreasoning relative or friend, and it is against just such friends that isolation is a necessary protection. We have seen in our summary of the symptoms of neurasthenia how the patient is given over to introspection and nosophobia, and it is in this respect that incalculable harm may be done by the injudicious conduct of relatives and friends. The exhibition of anxiety and the constant watching of symptoms serve only to convince the patient that she is seriously ill, perhaps hopelessly so. Sometimes the friend or relative studies and comments on the symptoms more closely than the patient herself, gives to the most trivial occurrences a magnified importance, and, by over-solicitous care and emotional display, serves to bring about a condition of mental invalidism. How much harm such conduct, often mistaken for sympathy, may do, only

those know who have come in close contact with it; normal, wholesome sympathy strengthens and encourages, but such false sympathy destroys. It is more especially in hysteria, as we shall see later on, that its influence is pernicious.

Occasionally, the circumstances surrounding a patient are of such a nature that absolute isolation is neither feasible nor wise. A mother, for instance, feels that she cannot consent to an entire separation from an only child for two or three months, and it may be wiser to permit brief visits by the child at stated periods. Other facts of a business nature, especially with male patients, occasionally necessitate modifications of the principle of isolation; but, with due precautions, these modifications are bereft of harm. Isolation, we should remember, is a very powerful expedient. It is true that it insures in the sick-room, other things being equal, an atmosphere of quiet, with freedom from care and from the great nervous drains of life; but occasionally, if carried out unwisely, or too mechanically, isolation may do injury. Especially is this the case when the treatment is attempted without the aid of a special nurse. Upon three separate occasions, I have seen in hospitals cases in which isolation had been attempted without such assistance, and in which for a time decided injury was done by the unrestrained opportunity given the patient for worry and morbid introspection.

In order that a rest treatment should be conducted properly and with advantage to the patient, a **special nurse** should always be placed in charge. It is her function to devote her entire time exclusively to the one patient This means that she shall be on duty twenty-two hours out of the twenty-four; *i. e.*, she shall be with the patient during the day, with the exception of two hours for recreation, and shall sleep upon a cot either in the same room with the patient or in a room immediately communicating. The introduction of the nurse into the room constitutes in itself a modification of the principle of isolation, and a very important modification; for the nurse, who, if properly trained and adapted to her work, is of a quiet and restful demeanor, in various ways diverts the patient and leads the mind of the latter gently along pleasant and easy channels. Through the nurse also the unimportant, unexciting, and everyday facts in relation to the outside world gain entrance to the

sick-room, and the patient feels her seclusion much less markedly than otherwise she would. The physician likewise, in his visits, acts as a medium through which general information is gained. General facts with regard to the patient's relatives—that they are all well, that everything is going on smoothly at home, that the physician is in communication with the family and friends—are conveyed to the patient, and these communications in a large measure contribute to the beneficial effects of isolation by modifying its stringency. The physician and the nurse should be careful, of course, to avoid anything in their demeanor or in their conversation that would in the remotest degree suggest to the patient that there is any unfavorable news from home which is being concealed. The patient is, as a rule, already predisposed to worry and to exaggerate unimportant matters relating to herself or to her family, and this caution cannot be too strongly insisted upon. Under a well-managed isolation, homesickness rarely, if ever, occurs. If it should make its appearance and become a factor in the case, it may easily be relieved by permitting a brief visit from some near relative of the patient's own choosing. If the visitor be trustworthy and has previously been cautioned not to alarm or distress the patient, the incident of the visit will not mar the progress of the treatment. At the very outset of the treatment, the confidence of the patient may be gained and her peace of mind be insured by the promise of the physician that he will at once inform her of any really serious happening at her home; it need not be added that this promise must scrupulously be kept.

General Effects and Necessary Adjuvants of Strict Rest Treatment

Under the correct conditions, the **benefits** to be derived from prolonged rest in bed are both **mental** and **physical.** Nervous tension and anxiety are withdrawn, while the physical strains are likewise reduced to a minimum. Brain-work having ceased, mental expenditure is reduced to slight play of the emotions and an easy drifting of the thoughts; a condition which soon breeds placidity and in most cases contentment. Moreover, the nerve-centers concerned in the function of movement and the muscles themselves

are lying fallow; the heart also is resting, for it now drives a stream of blood in a horizontal direction instead of in a vertical column, which means a vast difference in the amount of work imposed. Absolute rest, physiologically speaking, is, of course, impossible; but by continuous rest in bed the expenditure of energy on the part of a patient is reduced to the possible minimum. However, while fully realizing the truth and importance of this general proposition, we cannot but be impressed by the fact that prolonged and profound rest is not without its **dangers.** Prolonged rest in itself is not physiologic. As we have seen, prolonged excess of function is often followed by most serious consequences; on the other hand, the insufficient exercise of function may be followed by results no less disastrous. Just as, on the one hand, excess of function leads to abnormal consumption of tissue, so does the excess of rest, on the other hand, lead to degeneration of tissue. Degeneration of tissue means inevitably a diminution in the capacity for active function, and degeneration and incapacity ensue in direct proportion to the degree and duration of the abnormal inactivity. Diminution of function may be marked and persistent, and may even amount to the total abolition of functional ability. This may be seen typically in a joint placed at rest. The very existence of a joint depends upon its exercise of function as a point of movement. It is well known that in a joint which is placed at rest for a sufficiently long period, limitation of movement ensues, and if rest be persisted in, fixation, absolute loss of function, supervenes. Analogous changes are also observed in muscles that are at rest, and the inference is justified that like changes also take place in the corresponding motor centers. It is hardly necessary to speak of the ill effects of excessive rest upon the heart or blood-vessels, or on the centers which innervate these structures. Like pathologic fatigue, pathologic rest involves its logical dangers. Rest, either local or general, if unmodified and persisted in for too long a period, may inflict serious injury. Rest, therefore, is an instrument as powerful for evil as it is for good, and the problem presents itself as to how this potent agency shall be applied. Evidently it should be applied in such a manner that the patient will receive all its possible benefits without suffering from any of its attendant evils.

We are apparently in a dilemma. If we exercise the various faculties of our patient, we expend his energy and still further consume his tissues. If we put him at rest, we may inflict even greater harm. We must, to solve the problem, find a method or methods by means of which the patient's tissues may be exercised in a **passive** way; and for this purpose we have at our command various expedients.

Massage.—We have already seen that massage may be employed in the treatment of neurasthenia by relative or partial rest; and it has been shown that in the management of the milder forms of neurasthenia, massage is of less value than some forms of active exercise. In the bed treatment of neurasthenia, however, the indication for the employment of massage is imperative. It should always be given, it can never be dispensed with. As pointed out in the previous consideration of the subject, the massage should in the beginning of the treatment be very gentle and superficial in character and should be applied for only a short time. Severe or deep massage, given at first, may greatly increase the general sense of fatigue from which the patient already suffers, while local soreness or rapid action of the heart may add to his distress. Gentle superficial stroking, on the contrary, soothes the patient, and advantage may be taken of this fact by directing the application to be made in the evening. At this time massage strongly favors sleep; it is, indeed, one of the best agents for combating neurasthenic insomnia. Little by little the massage should be increased both in depth and vigor, and after the expiration of a variable period, say from a week to ten days, full vigorous massage may be given and its duration increased to about an hour. Some patients, however, are never at any time able to endure a very hard or prolonged rubbing.

Other things being equal, the massage should be given by the nurse. This, of course, makes it necessary that the nurse placed in charge of the case should be thoroughly trained in this measure. If the patient be treated by a masseuse at a given hour of the day, the visit of this third person may act as a disturbing factor; the patient is frequently upset by it, and too often the masseuse is a tactless and garrulous person, capable of working endless harm. In my own experience the masseuse has frequently retarded the progress of the patient. Under exceptional circumstances only is it

permissible that the massage should be given by some one other than the constant attendant. For instance, this is the case when the nurse loses sleep at night or when the case proves in other ways to be unusually trying, so that the nurse becomes too fatigued to give the massage properly. The special 'method' or 'school' followed in giving massage, it may be added, has little influence on the general result.

It is important, however, that this form of passive exercise be applied intelligently, skilfully, regularly, and systematically; and that the special manipulations be judiciously chosen and adapted to the conditions present in the individual case; for the details, as well as for the general underlying principles, the reader is referred to volume VII of this series. Here we may note a few facts of salient bearing on our special subject. The nurse should be exceedingly careful not to expose unnecessarily the body of the patient; this is in order that chilling of the surface may not take place. As a rule, the trunk becomes slightly warmer from the rubbing, and this is even more apt to be the case with the limbs; but occasionally the reverse is noted, and in such cases especially, undue exposure is to be avoided.

Toward the latter part of the treatment there should gradually be added to the massage **passive movements** of the limbs, these being flexed, extended, rotated, and abducted from the body in various directions. Finally, the movements should be converted into **movements with resistance.** As a rule, one or two movements, actively resisted, for each limb, are sufficient to begin with. Later their number may be increased and elaborated so as to include, finally, movements of the trunk and neck.

Electricity is distinctly inferior in value to massage. It is merely a useful adjuvant. At the same time its utility cannot be questioned. It also stimulates nutrition and enables us to combat the unfavorable effects of prolonged rest in bed, but, let me repeat, it is vastly inferior to massage and can never be substituted for the latter. Again, it should rarely, if ever, be used in the early stage of the treatment. The patient is, we should remember, exceedingly nervous; electricity is a mysterious agent and the patient is very

frequently exceedingly afraid of it. Indeed, in many cases the excitement and irritation which it causes may compel its discontinuance. Its use should not be begun until several weeks after treatment is well under way, and in some cases not until the last weeks of the treatment, preparatory to getting the patient out of bed. At this stage, the exercise that it gives the muscles is undoubtedly beneficial. Earlier it may fatigue and exhaust, besides irritating the patient. Sometimes, indeed, its use is followed by marked general depression and by coldness of the extremities, and if persisted in, may distinctly retard the increase in weight which otherwise takes place. As a rule, it should be applied in the form of a slowly interrupted faradaic current; and the nurse, who has been previously instructed in the more important motor points (points of Ziemssen, see volume II), makes the application in such a way that each group of muscles undergoes a given number of separate contractions. The applications should at first be limited to the flexors and extensors of the forearms and legs. Later, they may be made to the thighs, arms, and trunk. The duration of the electrization should be not more than from twenty to forty minutes.

Feeding.—Having considered the modification of rest by massage and by electricity, let us turn our attention to the question of **food.**

In accordance with what has previously been said, full feeding is indicated. The nutrition of the patient is to be raised to as high a level as possible by furnishing those materials of which he stands in greatest need. The question of diet is considered at length in another volume of this system, and here it is appropriate only that we should discuss some of its special relations to neurasthenia. As I have pointed out in our consideration of the general application of rest to neurasthenia, the symptoms which the patient presents are complicated either by an excessive formation or a defective elimination of uric acid and allied products. Further, our patient is not exercising, and it can be readily comprehended that she is but little in need of beef or lamb or other stimulating foods. Frequently the red meats can be withdrawn absolutely at first with marked advantage. Starchy foods, potatoes, and wheat-bread are

also counterindicated for reasons already given. In the class of neurasthenics now under consideration, the atony of the intestinal tract is, as a rule, very marked and is frequently complicated by a more or less pronounced catarrh. It is necessary, therefore, that the food should be as digestible as possible and should at the same time afford the patient abundant nourishment. At first the diet should consist largely, but not exclusively, of **milk**; later the quantity of other foods may be increased. Curiously enough, though milk would seem upon *à priori* grounds to be a food admirably adapted to their wants, neurasthenics usually object to it more or less strenuously. In the treatment of neurasthenia by rest in bed, however, the use of milk or some of its modifications is almost imperative. In only a few instances may it be dispensed with. It should at first be ordered in small quantities, say from three to four ounces six times daily. When indigestion is very marked, no other food should for the time being be given. Little by little, however, a small quantity of rice, a piece of bread and butter, or some cereal may be added. Soon a soft-boiled egg can be given at breakfast, a small piece of Salisbury steak at dinner, a little boiled rice or some stewed fruit at supper. Chicken, fish, and oysters are next added to the diet and an occasional chop or steak may be permitted. Gradually also one or more of the succulent vegetables, *e. g.*, spinach, squash, stewed celery, are added, and finally peas, string-beans, tomatoes, onions, and the like, until a full diet is reached. Potatoes should for a long time be excluded, as should also wheat-bread in any quantity. The neurasthenic is preeminently in need of a **mixed diet,** one capable of furnishing all that the tissues require: proteids, fats, carbohydrates, vegetable acids, and mineral salts.

The milk is gradually increased in quantity until finally eight, ten, twelve or more ounces are taken six times daily; *i. e.*, with meals, between meals, and at bedtime. In many cases from two to three quarts can be given in addition to a considerable quantity of other food, the patient digesting well the entire amount. Occasionally we find that the patient presents an actual idiosyncrasy with regard to the milk, and is either unable to digest it at all or is able to digest it only with difficulty or in small quantities, even

when it is modified in various ways. Under such circumstances it is necessary to resort to **egg-feeding.** Eggs are best given raw, and should be given in increasing number daily. The procedure is as follows: A raw egg is carefully opened and dropped into a cup in such a way that the yolk is not broken. The patient is then directed to swallow the egg whole with a single effort. As a rule, the trick is readily acquired and the patient experiences no unpleasant taste or other disagreeable sensation. It is best to administer the egg without salt, lemon-juice, or other attempt at flavoring. The white of egg is practically tasteless, and this is all that comes in contact with the tongue so long as the yolk remains unbroken. At first, as a rule, one raw egg between meals is ordered; then the number is increased to two, three, four, five, six or more, as circumstances permit. Afterward raw eggs are added to each meal, the number being cautiously increased to as many as the patient is able to take; the eggs should be swallowed immediately after the food of the meal proper has been taken. In this way six to eighteen or even two dozen eggs a day can be given to neurasthenics, and, strange to say, readily digested by them.

What has been said thus far, indicates in a general way how the feeding of the neurasthenic treated by rest in bed is to be accomplished. Various **modifications** are, of course, rendered necessary, first by diseases of the digestive tract, and secondly by the idiosyncrasies of the patient. As indicated in the foregoing paragraphs, the digestive disturbance from which neurasthenics most frequently suffer is gastric catarrh—sometimes slight, sometimes pronounced—together with delayed digestion. The indications are generally met by the employment of milk in the manner already outlined, but it may be necessary to modify the milk in various ways; as, for example, by skimming it, or by the addition of a small quantity of sodium bicarbonate or of lime-water. When there is tendency to looseness of the bowels, it is of advantage to boil or 'scald' the milk. Hot milk is exceedingly grateful to some persons; taken at night it distinctly favors sleep. Occasionally it is useful to dilute the milk with hot water. At times also malted milk may with advantage be substituted for fresh milk at night or once or twice during the day.

Frequently the addition to cold milk of some alkaline water,

still or effervescing, such as Vichy or Selters, makes it very acceptable; this is equally true of the simple carbonated waters, such as Apollinaris or artificial 'plain soda water.' Sometimes the addition of a little table salt makes the milk palatable; some patients will take and retain salted milk readily when they cannot take simple milk. The milk may also be predigested, or, what is perhaps a better plan, a small quantity of some digestive powder, such as pancreatin and sodium bicarbonate, may be added to cold milk just before the latter is taken. Buttermilk also is of great advantage, especially in cases in which there is marked constipation. Buttermilk may for a time be given exclusively, or both whole milk and buttermilk may be given separately at various intervals during the day, enough buttermilk being used to keep the bowels open.

In some cases **whey** can be employed with benefit. Although whey does not represent much nutriment, it may prove of service when milk is not tolerated. It is pleasant to taste and can often be given in considerable quantity. It does not answer, however, as a substitute for milk for any lengthy period. Starr's method of preparing whey yields a liquid which is more valuable than when prepared by other methods. He stirs up the curd in the whey and then strains the entire mixture. By this means a certain amount of the curd becomes suspended in the whey and makes it more nutritious. A small quantity of rennet, hock, lemon-juice, or, better still, wine of pepsin, may be used as the coagulant. Kumyss, or rather imitation kumyss, is of much greater value than whey, and is frequently retained and well digested when milk, even when modified in various ways, fails. The method of its preparation is exceedingly simple and the nurse should be instructed in the procedure.*

Cream is in my experience of distinctly inferior value to milk; occasionally, however, cream can be given when milk cannot. At times cream may be added to whey, the nutritive value of which

* Dissolve one-sixth of a yeast-cake in a little water; add this to a pint of milk which has been raised to about the body-temperature; add a dessertspoonful of cane-sugar. Pour into a bottle with a mechanical stopper, such as a beer-bottle, filling it as far as the neck. Lay the bottle in a warm place for about twelve hours; then on ice. Kumyss is readily taken by many patients who cannot take milk, and it is of great value in other cases by furnishing a substitute which can be given from time to time when the patient grows tired of milk in other forms.

it thus increases. It is sometimes better to dilute the cream with hot water.

At times when the difficulty of digestion is very pronounced, it may be necessary to resort for short periods to various meat, oyster or clam broths, or to some of the liquid beef preparations found in the market. It is not necessary to specify any of the latter; their number is considerable. They are valuable, of course, in direct proportion to the amount of peptones they contain. Some of the most extensively advertised preparations, however, consist chiefly of alcohol, and the fact of their alcoholic nature must be considered very carefully in prescribing them and in regulating their dosage. The best of them contains but little nutriment. A resort to broths or beef preparations in rest cases can, of course, only be regarded as a temporary expedient necessitated by pronounced indigestion, persistent nervous vomiting, temporary disgust for food, or other complication. How imperfectly these substances answer the purposes of food is proved by the fact that during their exclusive use the weight of the patient inevitably fails. Occasionally one of the peptone preparations can be added to milk in small quantities—a mixture which is occasionally preferred by some patients to whom the ordinary taste of milk is repulsive.

At times we may be forced to resort to **rectal feeding.** Various substances may be used. Peptonized milk, previously brought to the temperature of the body, is very serviceable. The most satisfactory material, however, for rectal injections consists of two parts by weight of finely scraped beef and one part by weight of finely chopped pancreas. The beef is thoroughly mixed with the gland, a little water is added, and the whole mixture gently warmed so as to start digestion. The quantity injected should be rather small; as a rule, about two ounces. The rectum may be made tolerant by the previous injection of a few drops of laudanum or by the use of a half-grain opium suppository. From three to four, occasionally more, rectal feedings can be given in the twenty-four hours without making the rectum sore. Occasionally the bowels should be washed out with a little warm water. Other substances than those here mentioned may, of course, be employed. They are elsewhere discussed. (See volume VI.)

A few points of importance in regard to the diet of the neurasthenic remain to be considered. As a rule, the patient continues to take and digest the food well even when the total amount for the twenty-four hours is very large. However, it is wise now and then to diminish the amount for a time. Especially is this the case during the **menstrual period.** During this period the patient can neither be bathed nor rubbed, and it is wise in forced feeding to diminish the quantity of food somewhat until the period is over. In other cases, again, the diet, if too restricted, palls upon the appetite, and in such case small quantities of salted food may be added with advantage. For instance, a few salted wafers may be given with the milk or a small quantity of dried beef or minced ham may be placed on the tray, in addition, of course, to the regular diet; occasionally also a small quantity of grilled bacon at breakfast is very acceptable.

Minor difficulties are sometimes presented by the refusal of the patient to eat certain articles of food. Thus some patients declare point-blank that the only meat that they will eat is beef; others decline absolutely to eat vegetables, and others still make persistent war upon the milk. The physician should, if possible, educate the patient to partake of a very varied and mixed diet. This object can, as a rule, be accomplished if the physician be not in too great haste to feed the patient large amounts. For instance, if marked peculiarities are noted in the patient, we should proceed somewhat as follows. Milk should, for example, be given whole or in a modified form in very small quantities, say two, three, or four ounces at intervals of two hours. Other food should during this period be absolutely excluded. Soon the patient becomes quite hungry, and in a day or two takes the milk eagerly. The quantity should then be gradually increased, the patient being kept a little hungry all the time. The victory that is gained is twofold, both physical and moral; as a rule, the patient can later be persuaded to begin taking other foods in small quantities, even when he does not like them. As already stated, however, it is occasionally impossible to give milk no matter how modified, how small the quantity, or what the circumstances. In such cases egg-feeding should be resorted to in the manner already described.

In regard to the use of **stimulants,** what has been said on page 44, when discussing the treatment of neurasthenia by relative rest, applies equally here. The treatment is best conducted from beginning to end without them. Occasionally, however, they may be used by persons who are beyond middle life. White wines or acid wines, for obvious reasons, should be avoided; at most a little claret or Burgundy may be permitted. Occasionally, too, when the period of absolute rest has terminated and the patient has begun to exercise out-of-doors, or when the appetite flags a little, a bottle of light beer may with advantage be substituted for the milk at dinner. This should always, of course, be withdrawn before the patient finally leaves the physician's care.

Bathing.—Just as it is necessary for the neurasthenic who is merely under general rest to bathe freely, so is it necessary to use bathing in the treatment of patients who are resting in bed. As a rule, a sponge bath with warm water, given between blankets, is all that is indicated. Indeed, it is the only bath that is tolerated at first, and as a rule it answers every purpose. Gentle friction with a towel afterward is sufficient to prevent any local depression of temperature. Occasionally, however, it is necessary for the nurse to rub the limbs with her hands moistened with alcohol, friction being vigorously maintained until the limbs feel warm. In this way the coldness and depression which every now and then follow the bath may be avoided. Later in the treatment, tub-bathing may once in a while be substituted, the general principles indicated on page 45 being followed. The caution already expressed as to the feebleness of the circulation in neurasthenics would warn us not to use cold bathing or extensive bathing, especially at first. The cold douche, spray, or shower-bath should not be employed until improvement by rest methods has been well established, that is, toward the close of the treatment. In many cases, it need hardly be added, cold or vigorous bathing is never applicable. The method of giving the cold bath is a matter of importance. The patient should stand in six or eight inches of warm water (90° F.) while the trunk, arms, and legs are douched by water of a slightly lower temperature; day by day the temperature of the douche is gradually lowered until about 60° F. (15.5° C.)

is reached. In this way the initial shock, so distressing to neurasthenics, is greatly diminished. The nurse may use a basin or a large dipper in giving the douche; if a shower or spray apparatus be at hand, it is to be preferred because of the additional benefit to be gained from the mechanical impact of the water. The expedient of the section of garden-hose and sprinkler already mentioned on page 46 may here be substituted. We must, however, repeat the caution that neurasthenics, especially in the early period of their treatment, are made worse by unnecessary handling or fussing, and vigorous bathing should only be resorted to, if at all, after improvement has been well advanced. Finally, it need hardly be added that especial caution should be exercised in the case of patients beyond middle life.

The **degree of progress** that is made in a given case is estimated as in the treatment by relative rest, first, by the subsidence of the fatigue symptoms, and, secondly, by the increase in the patient's weight. The general sense of tiredness and the various local fatigue symptoms as a rule begin to yield from the first. Recurrences, however, are apt to take place from time to time, and not infrequently weeks elapse before these cease altogether. As a rule, the **time** required for the successful treatment of a case of neurasthenia of such severity as to demand full bed treatment extends over a period varying from eight weeks to three months. It is comparatively infrequent that a really good and durable result can be achieved in six weeks; generally eight, ten, or twelve weeks are required, and sometimes longer. Usually young neurasthenic individuals require a shorter period of time than those that are older or middle-aged and in whom it is more difficult to stimulate the processes of repair.

In addition to observing the case closely from day to day, the patient should be **weighed** at intervals of every two or three weeks. It is generally of advantage not to begin weighing the patient until at least three weeks have elapsed, as it often happens that the preliminary difficulties presented by indigestion and other disturbances are of such a character as to make pronounced gain in weight at an earlier period improbable. Moreover, unless the gain in weight at the time of the first weighing be marked, the patient is apt to become

depressed and to have his confidence in the ultimate result of the treatment diminished. After the first weighing, the patient should be weighed at intervals of two weeks and the progress noted. In the larger number of patients we are able not only to bring the weight up to the normal, taking into consideration the height, age, and sex of the individual, but even greatly in excess of this. Sometimes, indeed, if care be not exercised, the patients become needlessly fat and heavy. A moderate excess of weight is not a disadvantage, however, because it enables us to submit the patient to a thorough system of exercise after the rest treatment is completed.

Conclusion of the Bed-period of Treatment

As the days and weeks pass by, provided the case progresses favorably, various changes are noted. Not only does the patient increase in weight, but there is also a decided improvement in the other physical signs. The muscles become firm, the chilled extremities grow warm, the damp skin becomes dry, and the pallor of the surface gives way to normal flesh tints. At the same time, a change is noted in the mental condition of the patient. After the first week or ten days of the nervousness and restlessness incident to the initial period of the treatment, the patient passes into a condition of placidity, indifference, and contentment. The ever-increasing sense of physical well-being—the luxurious sense of comfort induced by the full feeding, the absolute quiet, and the various physiologic procedures —is such as to induce a state of extreme mental satisfaction. The patient usually remains in this condition until a large degree of improvement has been reached and maintained for some time. Sooner or later, however, a reaction sets in. Mental indifference and placidity now give way to spontaneity of thought and action and to a desire for activity, both mental and physical. The patient begins to be restless and to ask the physician when she may leave her bed or when she may begin to exercise.

As soon as the maximum degree of improvement has in the physician's judgment been attained, the patient should be permitted to sit up for a few minutes daily, say five or ten minutes at first. It is of the utmost importance that the getting up of the patient should be brought about in as gradual a manner as possible. Otherwise

he may be distressed by a sensation of weakness and trembling in the extremities, by faintness, or by giddiness. Such symptoms, however, are never observed in cases in which due care is exercised. After a few days the time can be increased by a few minutes, and later the patient can be permitted to be out of bed twice daily. Little by little the time is further increased, the patient also being directed to take limited exercise about the room. In the same gradual manner light calisthenic **exercise,** and finally a full course of Swedish movements, should be instituted. The time out of bed is gradually increased until finally the patient sits up for five or six hours out of the twenty-four. Exercise in the open air by means of walking or an occasional carriage-ride is now added. Finally the patient is up for the greater part of the day, rising late, say at half-past ten or eleven, lying down between two and four, and going to bed again immediately before or after supper. The treatment is best completed by sending the patient away to some nearby point in the **country** or at the **seashore,** where exercise in the open air can be still further carried out. As a rule, two weeks at the seashore or elsewhere are sufficient for this purpose, though sometimes a longer period is desirable. During the stay at the seashore, or shortly before this period, **communication** with relatives and friends can gradually be resumed. The patient is again brought into contact with the outer world and thus prepared for her return to her home. While at the seashore she should, of course, be accompanied by her nurse, who should still carry out general rest methods. However, the nurse should gradually withdraw from the patient assistance in dressing, bathing, and in other matters, so that by the time the patient is ready to leave for home she has become entirely self-dependent. As much as possible, also, the nurse should stimulate the patient to the free exercise of her own judgment and volition, and in this way stimulate self-confidence and self-reliance.

It cannot be too strongly impressed upon the reader that a course of vigorous and persistent **exercise** is necessary in order to bring about a durable result; indeed, the benefits accruing from a rest treatment may be lost if the treatment be not followed by exercise. Happily one of the great advantages of a course of rest treatment away from home is that it frequently and permanently modifies the

patient's habits in regard to exercise. The error should not be made, however, of directing the patient to take too much exercise at first. Walking, golf, horseback-riding, and, occasionally, swimming or surf bathing may be employed according to circumstances. What has been said in this respect in discussing treatment by partial rest applies equally here (see page 38). The exercise should be little at first and steadily increased, but should always stop well within the limits of fatigue.

The patient finally **returning to her home,** should be instructed to live conservatively; a strictly physiologic method of living should be insisted upon. As a rule, a permanent result follows a radical treatment, especially if this subsequent course be carried out. The patient should also seek to fill in her time with some agreeable and suitable occupation. This point is of the utmost importance. Sometimes difficulty is experienced in the selection of the work, but there is no reason why even a well-to-do or wealthy woman should not take up a course as librarian or private secretary, or should not become proficient in stenography, or, if she be intellectually inclined, take up a special line of study in history, art, or literature. It cannot be too strongly insisted upon that work is the best guarantee of mental and physical health,—work within physiologic limits and adapted to the physical and mental constitution of the patient. An active interest in life insures healthy mental exercise, and this is as necessary to mental health as is physical exercise to bodily health. While it is of the utmost importance to prevent the patient from lapsing into habits of idleness, it is equally important, on the other hand, to prevent him from again placing himself under conditions and surroundings similar to those which led to his illness. The danger of a relapse should be clearly pointed out and overwork and overstrain, in all its forms, should be carefully guarded against.

Auxiliary Medication

In the plan of treatment outlined in the foregoing pages, medicines have not been mentioned; in many cases few drugs are required from the beginning to the end of the treatment—perhaps none at all. Special indications, however, frequently arise for their temporary use. Some

of these have already been considered in discussing the treatment of neurasthenia by relative rest. Thus, **atony and catarrh of the stomach** and of other portions of the digestive tract are frequently met with. In simple atony small doses of nux vomica, the simple bitters, such as gentian, and carminatives, such as cardamom, may be given. They probably stimulate digestion, but, in addition, like other medicines, they also act by suggestion. Many patients are met with who, if no medicine be prescribed, believe that everything possible is not being done for them, no matter how freely or elaborately the various expedients, such as massage, exercise, electricity, and bathing, may be employed. In cases of this kind, simple remedies, such as are here mentioned, often prove extremely efficient. It is not usually necessary to stimulate the appetite in neurasthenia, for, strange to say, the average neurasthenic has a good appetite; indeed, he sometimes eats excessively. It is only in the graver forms that anorexia is met with. Here, of course, nux vomica, minute doses of strychnin, or the simple bitters, with or without a few drops of dilute hydrochloric acid, may usefully be given. Gastric catarrh, when present, can be successfully combated not only by proper modifications of the diet, but also by the various remedies already considered on page 41; namely, small doses of bismuth subnitrate before meals, or silver nitrate in pill form (say one-fourth grain with one-fourth or one-half grain of extract of hyoscyamus), twenty minutes or half an hour before meals. The silver pill should be swallowed with a small quantity of water, about half an ounce; it is often of decided benefit and may be continued for several weeks. At times when gastric catarrh is marked, and when the stomach is also intolerant to food, small doses of Fowler's solution (from one-half drop to two drops in a teaspoonful of water, ten minutes before taking nourishment) are often of much value. At other times a pill of one-fourth grain of cocain hydrochlorate, ten minutes before meals, is efficacious. Occasionally it is better to give bismuth subnitrate and cocain together in powder. Sometimes a cup of hot water taken before breakfast, or even before each of the meals, is of service. Lavage of the stomach is only exceptionally indicated; it may be employed when the gastric catarrh is very pronounced and very persistent, but even then it should not be resorted to except at somewhat

lengthy intervals. If the gastric symptoms do not improve after a reasonable interval, a test-breakfast should be given and the stomach-contents systematically examined. Test-meals, it is true, are rarely necessary in the class of patients under consideration. Every now and then they assist us in differentiating grave organic lesions, as ulcer and carcinoma, from the mere digestive complications of neurasthenia. In this connection it is well to remember that hydrochloric acid may be entirely absent in simple catarrh; and the diagnosis must be made from due consideration of all the facts in the case, including, if necessary, a careful study of the blood.

At times atony and catarrh involve especially the small intestine. In such cases bismuth beta-napthol or orphol in ten or fifteen grain doses, three times daily, is often of value. This is also true of beta-napthol, which may be given in capsules of from three to five grains after meals. At other times there is tenderness over the colon and occasionally also a pseudo-fibrinous or mucous exudation which is passed with the bowel movements—so-called mucous colitis or croupous enteritis. In such cases it is often beneficial to use high colonic irrigations; the best solution being simple warm water to which a small quantity of salt (sodium chlorid 0.77 per cent., say a teaspoonful to the pint) may be added. (See volume IX, Appendix.) I have never seen any advantage in the use of medicated injections. It is the repeated irrigation and thorough cleansing of the bowel which are of value. Mucous and catarrhal conditions of the large intestine are not of themselves serious complications of neurasthenia, but the presence of mucus in the movements is often noted by the patient, who may become unduly alarmed. Many patients, already nosophobic, begin to watch their stools closely from day to day. The condition, it need hardly be added, improves hand in hand with the general health, and eventually disappears altogether.

In a large number of cases of neurasthenia, **constipation** is present. At times this is successfully combated by the diet and by massage. Frequently it is necessary to employ some simple laxative. If catarrh of the stomach and intestines be present, it is of advantage to use sodium phosphate, preferably the effervescent preparation, in dessert or tablespoonful doses, freely dissolved in water, about

thirty to sixty minutes before breakfast. Other mild laxatives, such as Hathorn or Friedrichschall water, may also be employed. There is, however, a decided disadvantage in the long-continued use of salines, no matter how mild, in patients whose weight we are trying to increase. It is wiser, therefore, when we are obliged to use a laxative for some time, to give some simple vegetable preparation, such as a pill containing small doses of compound extract of colocynth, aloes, and belladonna, or the well-known pill of aloes, belladonna, and strychnin; in cases in which a more decided laxative is required a pill containing podophyllin may be administered. As a rule, the laxative pill should be given at night. In the majority of cases of neurasthenia, however, simple atony of the bowel is the difficulty which confronts us, and this is best met by some preparation of cascara. At times the aromatic fluid extract, which is pleasant to take, answers every purpose. More frequently, however, the simple fluid extract, because of its greater efficiency, is to be employed. It should, as already mentioned on page 41, be given in small doses after meals rather than in a single decided dose at bedtime. As a rule, eight to fifteen drops after each meal is sufficient. By giving the remedy after meals, its action, which is tonic and stimulating to the intestine, is diffused over the entire twenty-four hours. The fluid extract is greatly to be preferred over cascara in pill form because of the nicety with which the doses can be regulated. As a rule, the constipation in neurasthenics rapidly improves, and the dose of cascara can be diminished drop by drop until it is finally withdrawn altogether.

In all cases in which constipation is present, thorough **massage of the bowel** should, of course, be employed. This should be given not only with the patient lying in bed upon the back, but, especially in obstinate cases, also with the patient upon all fours or with the shoulders and arms resting upon the back of a chair; by these postures, the abdomen is made more or less pendulous and can be manipulated very vigorously. Occasionally **electricity** is also of service; one pole of the faradaic battery should be placed over the lumbar region and the other over various points on the abdominal wall—especially in the neighborhood of the navel. A rapidly interrupted faradaic current is most serviceable. Instead of placing one

electrode over the small of the back, a properly protected metallic electrode (a rectal electrode) may be inserted as far as possible into the bowel. This procedure, however, is rarely necessary and is attended with considerable discomfort to the patient.

It need hardly be pointed out here how in various digestive disturbances the alkalies, the mineral acids, the digestive ferments, or the antispasmodics, camphor and asafetida, are to be employed. These subjects are dealt with in works upon materia medica and upon diseases of the digestive tract.

Occasionally in spite of the rest, the bathing, and the massage, the various fatigue sensations, pains, and aches of which the patient complains persist for an unduly long period. Pains thus persisting are probably due to the **retention of waste products,** especially of the uric acid or alloxuric group. This point I regard as of great importance and of special significance because of the close relation existing between neurasthenia and the so-called uric acid diathesis. Indeed, it has become my rule to regard aching pains in neurasthenia, when persistent, as of diathetic origin and demanding diathetic treatment. Usually they yield more or less readily to such measures. Some salicylate which is well borne by the stomach should be given, such as aspirin, salophen, or salol. Aspirin in fifteen-grain doses three or four times a day is usually very efficient. When the stomach is in good condition, sodium salicylate, ten or fifteen grains, with an equal or slightly larger quantity of sodium bromid may be given in a large quantity of water after meals. The salicylates are efficacious not only in the backache and limbache of neurasthenia, but also in many of the persistent headaches. An alkaline treatment by means of lithia waters may also be instituted, or, what is better, piperazin, or preferably lycetol, should be given along with large quantities of water. I frequently prescribe from five to ten grains of lycetol to be given in a half-pint of water twice daily; some carbonated or other table-water should be given freely in addition.

Occasionally a **headache** is so severe that it is necessary to use some analgesic; in such case it is better to avoid the use of the coal-tar products if possible. Trial should first be made of small or increasing doses of a trustworthy fluid extract of cannabis indica—say from one to five drops repeated every two hours until the pain is relieved. This

drug possesses the great advantage of not producing any depression in the patient. Sometimes, however, its physiologic effects become manifest, and these may cause the patient considerable distress and alarm. The initial dose should therefore be small, one drop or less, and it should only gradually be increased and not repeated at too short intervals. When the cannabis indica fails, or when it cannot be tolerated, fluid extract of gelsemium should be given in its place. From five to ten drops of this drug, repeated in two hours if no impression has been made on the pain, are very frequently efficacious. In large doses gelsemium is a motor depressant, and it should not be used too freely in neurasthenia. It is also a less valuable remedy than cannabis indica. In many cases of headache we are forced to make use of one of the coal-tar products—preferably phenacetin. These are also of benefit in relieving backache and limbache. They are best given alone; at times, however, they may be advantageously combined with a bromid—ammonium or strontium; thus ten grains of antipyrin with twenty grains of ammonium bromid. If there be much depression produced by the pain or the drug, a grain of caffein may be added; camphor monobromate (one to three grains) is also a useful adjuvant. These remedies should, however, for obvious reasons be avoided if possible, and if employed be discontinued promptly.

Occasionally electricity is of service, together with massage, in relieving aching in the back or in the limbs. The constant galvanic current should be used, the positive electrode, which should consist of a large flat disc, being applied over the painful area. Sometimes, as over the spine, the pain is complicated by hyperesthesia; here the galvanic current used in the manner described is often of decided value. If the pain be diffused in character and evidently involving the muscles, a mild, rapidly interrupted faradaic current is useful. Local hot wet packs over the painful area are also at times followed by good results.

In cases in which pain persists in spite of diathetic or other treatment, local or special causes should be sought for. It is hardly necessary to point out, for instance, how often persistent headache is due to some affection of the **eyes**—an anomaly of refraction or of the ocular muscles. An examination of the eyes should therefore be made in all such cases, though correction and other interference

is generally best deferred until the close or the latter part of the rest treatment. In other cases the **nasal cavities,** the **teeth,** or it may be the **pelvic organs,** will demand our attention. Neurasthenics, because of the extreme irritability of the nervous system, react excessively to slight causes of peripheral irritation, and comparatively trifling local disturbances may be instrumental in keeping up a headache. Frequently, however, the true neurasthenic character of the pain is shown by the fact that it persists after the local trouble has been corrected. The relation of local affections to neurasthenia is fully considered in the discussion of neurasthenia symptomatica and the neurasthenoid states (pages 87 to 92).

When special pains or aches fail to respond to diathetic and other treatment, and when they are not related to local or visceral disease, **hysteria** should be suspected and the stigmata of this affection carefully sought for. In such case, of course, the patient would not be suffering from a neurasthenia simplex but from one complicated by hysteria, or possibly from hysteria alone. (See chapter on Hysteria.)

An annoying complication of neurasthenia is every now and then presented by **insomnia.** In many cases the mere taking of food has a soporific or sedative influence; occasionally a glass of hot milk or of hot malted milk has an extremely soothing effect. Massage given at night also favors sleep in most cases. Sometimes a hot tub-bath or the hot wet pack (see page 46) is successful in bringing about the desired result. In other cases the 'drip sheet' entirely overcomes the insomnia. The patient stands in a few inches of tepid water in a tub. A linen sheet, dripping with water at a temperature of 60° or 50° F. (15.5° or 10° C.), is wrapped loosely about the patient, and the nurse now makes vigorous friction through and with the sheet. As a rule, the surface and limbs of the patient soon become warm, and on drying the patient and placing him in bed, a quiet refreshing sleep is apt to ensue. Occasionally, however, these and other means fail, and the insomnia then persists as a most distressing symptom. Under these circumstances it is wise to use one of the milder hypnotics for a short time. By this means the sleep habit is re-established and the drug can, as a rule, be

discontinued readily. The victory over the patient is often greatest if the remedy can be given without his knowledge; he is then apt to believe that sleep has been produced by the other measures adopted and he continues the habit of sleep subsequently when these measures alone are used. A drug frequently efficacious under these circumstances is hyoscin; it may be given in doses of from one two-hundredth of a grain to one seventy-fifth of a grain. It may be dissolved in the bedtime milk or in the last drink of water which the patient takes at night. It is not usually followed by any unpleasant reaction, though in exceptional cases it produces a slight dryness of the mouth and throat. Scopolamin (Merck), which closely resembles hyoscin, has in my hands proved somewhat more efficacious than the latter. The dose necessary appears to be somewhat smaller, while the sleep is somewhat longer. Unfortunately neither hyoscin nor scopolamin is a very certain hypnotic, and when both fail, we are obliged to fall back upon trional, sulphonal, or chloralamid. Many neurasthenics fall asleep readily, but awaken in the early morning or at various intervals throughout the night. In such cases sulphonal in small doses—five or ten grains—often acts admirably. If the patient has difficulty in falling asleep, trional administered early in the evening is efficacious. Not infrequently it is of advantage to use trional and sulphonal together; for example, ten grains of trional with five or ten grains of sulphonal. Chloralamid is also of decided usefulness. It produces a pleasant sleep and is not followed by depression. It should be given in doses of about thirty grains. Chloretone is a drug which, though valuable, is somewhat uncertain in its action. Occasionally five or six grains are sufficient to produce a tranquil sleep, but more frequently from fifteen to thirty grains are required. In the majority of the cases the sleep it produces is not followed by unpleasant after-effects, but at times, and for some unknown reason, a most pronounecd and persistent depression follows its use, the depression being both mental and physical. Occasionally marked mental depression follows even small doses, but this is rare. I have given large doses—thirty grains in some cases—for a number of nights in succession without the least after-depression. Paraldehyde is another remedy which may be resorted to from time to time; it has the advantage of never being depressant.

It is of special service in those cases in which the patient has marked difficulty in falling asleep, but when once asleep continues so during the remainder of the night. Given in doses of from thirty minims to two fluidrams (2 to 8 c.c.), it produces sleep, as a rule, in a very few minutes. Frequently, however, the sleep is of short duration, perhaps only two or three hours. It has also the disadvantage of being eliminated very slowly, so that its unpleasant odor persists upon the patient's breath during the following day. Bromids also may occasionally be resorted to; but given in sufficient doses to produce sleep, they are usually followed by depression. This is also true of chloral, which, like morphin, should, indeed, never be used in neurasthenia. Among remedies which favor sleep, though not in themselves hypnotics, must be mentioned phenacetin and antipyrin. In many neurasthenics their administration, by relieving nervous irritation, is followed by sleep.

Occasionally the **nervousness** of the patient persists for an unusually long period after the institution of rest methods, and in such cases it is justifiable to make use of moderate doses of one of the bromids. Strontium bromid or, better still, ammonium bromid, because it is the least depressant of all the bromids, may be given in fifteen or twenty grain doses, in a large quantity of water after meals. In bad cases the bromid may be associated for a short time with five or ten grain doses of antipyrin. Such a combination exerts a decidedly steadying effect upon the nervous system. It should, of course, be gradually but rapidly withdrawn so soon as the nervousness has been controlled. Other remedies may also be employed; for instance, a three-grain pill of asafetida may be given three or four times a day, especially when the nervousness is associated with intestinal disturbance. When complaint is made of sinking sensations referred to the epigastrium, a capsule containing two or three grains of camphor given after meals may have a most beneficial effect.

It is largely the custom to employ **tonics** in neurasthenia. I believe them to be of comparatively little value in this affection provided that rest measures are efficiently carried out. They are

rarely indicated. The appetite of the patient is already good and the wants of his tissues are best met by food. It is a common custom to prescribe iron, and yet in neurasthenia there is no affection of the blood; its specific gravity, the percentage of hemoglobin, and the blood-count are normal, or present but trifling variations from the normal. The surface pallor noted in so many neurasthenics is not indicative of anemia but is merely due to the feebleness of the surface circulation. A drug very frequently prescribed is strychnin. The philosophy of its employment is difficult to understand; it can only help the patient temporarily; it is not a food and cannot build up tissue; and it has the disadvantage of occasionally increasing the nervous tension from which the patient suffers. Many patients come to the physician making the statement that they cannot bear strychnin and requesting that it be not prescribed. Under certain conditions, however, it should be employed; for example, when there is unusual feebleness of the heart. It should then be prescribed in large doses, *i. e.*, from one-thirtieth to one-twentieth of a grain, three or four times daily. Cod-liver oil is usually unnecessary. The fatty matters contained in the food and in the milk, or, if fatty elements be especially indicated, in the cream added to the milk, are in most cases sufficient. Similar remarks apply to the various malt preparations; at best they are merely adjuvants to feeding and are only infrequently indicated.

Management of Obese Patients

A difficult problem is now and then presented by patients who, instead of being thin, are over-fat, and who notwithstanding are so profoundly neurasthenic as to demand treatment by rest in bed. As a rule, these patients present not only excessive muscular weakness but also great feebleness of the circulation. They are soft and flabby, with pallor of the surface and coldness of the extremities, and have but feeble powers of resistance. By a careful application of the methods already discussed, a very remarkable change can be brought about in them. The carbohydrates and hydrocarbons, the starches and fatty foods, should, of course, be excluded from the diet, or permitted only in minimal amount. The diet should consist at first of the white meats and of the succulent vegetables,

together with milk which has been thoroughly skimmed. At the same time massage should be instituted, directed especially to the fatty deposit; the fat rather than the muscles should be kneaded, squeezed, and rubbed. By these means much of the soft subcutaneous fatty tissue is gotten rid of, and if, later on, when the general progress of the case justifies it, exercise, first slight and later vigorous, be instituted, striking changes are observed. The patient becomes smaller, the tissues grow hard and firm, and in addition the neurasthenic symptoms gradually disappear. Usually the patient loses weight while the general reduction in bulk is taking place, but in other instances an actual increase in weight accompanies the diminution in size. As a rule, dietetic measures with properly applied massage and exercise are all that is required, and thyroid extract can usually be dispensed with. Now and then, however, it may with advantage be employed, but it should be given in moderate doses; we ought not to lose sight of the fact that in decided doses it is both a cardiac and cerebral excitant, with toxic and depressing powers not yet well understood. It sometimes produces an actual, morbid denutrition.

Historical Résumé

The picture of neurasthenia presented in the foregoing pages, as well as the discussion of the principles of its treatment, render it necessary to speak at this point of the part taken by American physicians, especially by George M. B. Beard and by S. Weir Mitchell, in the recognition of the disease and in the development of its treatment. Although medical men had vaguely recognized the existence of the affection so early as the sixteenth century, definite knowledge in regard to it is quite recent. According to Arndt, the first writing in which neurasthenic symptoms are mentioned is that of Fernel. It bears the title "De Abditis Rerum Causis," was published in 1540, and ascribed the symptoms to vapors arising from altered sperm or menstrual blood. Later writers were equally obscure and no less fanciful in their pathology. This is implied by the titles of their works; for instance, Lange, "Treatise on Vapors, their Effects and their Remedies," Paris, 1687; Joly, "Discourse on a Strange Malady, Hypochondriac and Gaseous," Paris, 1689; Hunauld,

"Dissertation on the Vapors and Losses of the Blood," Paris, 1716; Blackmoore, "Treatise on the Spleen and Vapours," London, 1725; and by the titles of other works, too numerous to mention, up to the latter part of the eighteenth century. These writings reveal a knowledge of quite a number of neurasthenic symptoms, such as giddiness, cardiac palpitation, constriction of the head, and states of fear; but these are associated with signs which to-day would lead to the diagnosis of other functional or even organic nervous diseases. The subject remained in a condition of gross confusion until 1765, when Robert Whyte, of Edinburgh, differentiated between neurasthenia, hysteria, and hypochondria. In his work on these nervous disorders he says clearly: "The complaints of the first of the above classes may be called simply nervous; those of the second, in compliance with custom, may be said to be hysteric, and those of the third hypochondriac." Notwithstanding this lucid statement, and despite the great number of subsequent publications, little further progress was made until the beginning of the second half of the nineteenth century, when there appeared the writings of Bouchut. This author in 1857 published a paper "On the Nervous State in its Acute and Chronic Form," in the "Bulletin de L'Académie de médecine," and subsequently other writings upon the same subject, in "L'Union Médicale" and the "Gazette des Hôpitaux," the last appearing so late as 1869. Bouchut maintained that an affection, which he designated as *nervosisme*, and which had heretofore been confounded with hysteria, hypochondria, the psychoses, and with various forms of organic disease, was really an independent affection and was just as much a disease as hysteria or epilepsy. He maintained that it did not depend upon organic changes in the nervous system but was purely a functional disease. He distinguished between an acute and a chronic form, and it is here that he fell into error. He recognized under the acute form various active febrile states occurring in weakened and in debilitated individuals after slight and often inconsequential causes. Under the chronic form, however, he grouped the manifold symptoms which are observed as persistent phenomena in nervous individuals; the special symptoms noted in a given case depend upon the form which the nervousness takes, and there are to be distinguished not

only a *nervosisme cérébral*, *spinal*, *cardiaque*, *laryngé*, *gastrique*, *utérin*, *séminal*, *cutané*, *spasmodique*, *paralytique*, *douloureux*, but also a *nervosisme simple*, *hystérique*, *hypochondriaque*, etc. Bouchut's recognition of an acute or a febrile form is unfortunate; it embraces diverse febrile or inflammatory affections occurring in nervous individuals. In the recognition of the chronic form, however, he approaches remarkably near, as Mueller points out, to the modern conception of neurasthenia. His division into the forms above enumerated closely calls to mind some of the well-known clinical forms recognized at the present day, such as the spinal and gastro-intestinal forms. Others of his forms, however, such as the *nervosisme paralytique*, *spasmodique*, and *douloureux*, prove that he still confounded other affections with neurasthenia. Great as had been the step forward, much was still left to be desired; Bouchut's writings were simply rough indications along pathways still undefined.

It remained for an American physician, George M. B. Beard, to give to the affection under consideration a true individuality and a name by which it subsequently became known to the entire civilized world—namely, **neurasthenia**. The introduction of this word at once gave definiteness to the conception of the disease, while the descriptions given by Beard added much to our knowledge of its symptoms. Although Beard, like his predecessors, made many statements which increasing experience proved to be erroneous, he notwithstanding had clear conceptions as to the nature of the affection. He believed it to be a chronic functional disease, the cause of which lies in a diminution of nervous strength, this in turn being dependent upon an impaired or defective nutrition of nervous tissue. He also recognized clearly that it was not caused by anemia. He ascribed the various symptoms observed by him to reflex phenomena in which the sympathetic and the vasomotor nerves played important rôles. Beard's writings attracted great attention, especially abroad, and numerous papers by Continental writers tended, some to further elucidate our knowledge of the disease, and others, to increase confusion. The conception of neurasthenia, however, became firmly engrafted upon medical literature.

The first use of the word neurasthenia in this connection, it

should here be added, was not made by Beard, but, as C. H. Hughes of St. Louis has pointed out, by E. H. Van Deusen, of Kalamazoo, Michigan, who first used the word in the supplement to the Biennial Report of the Michigan Asylum for the Insane for 1867. He says, among other things: "Our observations have led us to think that there is a disorder of the nervous system, the essential character of which is well expressed by the term given above, and so uniform in development and progress that it may with propriety be regarded as a distinct form of disease." Van Deusen, however, did not follow up his suggestion, and it is also quite certain that Beard, although his first publication did not appear until 1869, in the "Boston Medical and Surgical Journal," had no knowledge of Van Deusen's views. The word neurasthenia, though perhaps invented independently by both Beard and Van Deusen, is apparently much older. Thus, it is found in the first edition of "Dunglison's Medical Dictionary," published in 1833; contemporaneous English, French, and German dictionaries, however, do not contain it.

Beard's publications were very numerous and extended from 1869 to 1881. He was the first writer to present a separate treatise on nervous exhaustion. While he advanced many views which to-day are untenable,—for instance, that neurasthenia is a modern disease, that it is an American disease, that neurasthenic persons suffer less from febrile and inflammatory affections than others or that they are especially predisposed to disease of the teeth, that they are mostly persons of fine physical development, that they are persons who are capable of an unusual amount of work, mental and physical, that neurasthenics are more youthful in appearance than other persons, and similar partial observations,—he nevertheless was the first writer to entertain clear conceptions of the disease; and when we reflect upon the great importance of the subject, we can justly claim for Beard that he initiated a new epoch in practical medicine.

The contributions of Beard to our clinical knowledge of neurasthenia were destined to be supplemented by a still greater achievement in the field of therapeutics. Time had waited for the genius of another American physician, S. Weir Mitchell, to apply in the treatment of this disease, and a kindred affection, hysteria, the

principle of rest. Dr. Mitchell's first publication on this important subject appeared in 1875 in Seguin's Series of American Clinical Lectures, volume I, No. IV, on "Rest in the Treatment of Nervous Diseases." Subsequently, in a treatise entitled "Fat and Blood, an Essay on the Treatment of certain Forms of Neurasthenia and Hysteria," and in his "Lectures on Diseases of the Nervous System, especially in Women," he published his views and methods in greater detail. It is difficult at this day, more than a quarter of a century after Weir Mitchell's first utterance upon the subject, to appreciate the importance and the radical character of this innovation in therapeutics. In the treatment of chronic affections, as in that of acute diseases, physicians had been in the habit of relying almost exclusively upon medicines; and when other remedies, such as massage or electricity, were employed, they were used in an independent and isolated manner. They were not incorporated as parts of any one method or plan of treatment, and, as regards rest, it is safe to say that up to the time of Mitchell no one had had any adequate conception of its importance or of its great therapeutic power. No one had ventured to employ it in so radical a manner nor in a way involving weeks and months of continuous stay in bed. The ill effects of excessive rest—of insufficient exercise—had been vaguely recognized, but no one had attempted to combat the disadvantages of rest,—to rob it of its harm by the application of corrective procedures; no one had attempted to formulate a plan of treatment in which rest should be the main therapeutic measure, —rest so guarded and corrected that none of its evils, only its benefits, should accrue to the patient. It is this achievement which belongs to Weir Mitchell, an achievement which is distinctly and solely his. The rest cure is essentially a cure by physiologic methods, and this alone is sufficient to give it the stamp of originality.

We have seen, in considering the general application of rest to neurasthenia, that the treatment must be based upon broad physiologic principles. Rest must be supplemented by exercise, either active or passive; the starved tissues must be supplied with food; waste products must be eliminated. In the application of these principles, no one method can be followed. Each case demands

a special application in accordance with its individual needs. Some cases demand relative rest with active exercise; others, again, rigid seclusion with passive exercise. Further, the rest cure, as well as the treatment by relative rest, must be expanded so as to include all of the physiologic methods at our disposal. Especially should the treatment include some method of facilitating the elimination of the waste products. How the latter tend to accumulate in neurasthenia, and how injuriously they affect the organism by their retention, we have seen. Evidently there should be added to the treatment, the free ingestion of liquids and some form of hydrotherapy. How efficacious the methods of hydrotherapy are in assisting the elimination of waste products has more than once been stated in these pages, and the importance of this point cannot be too strongly accentuated. Rest methods not infrequently fail if means are not taken to stimulate the elimination of uric acid and its metabolic congeners. The rôle which the diet plays in the attainment of this end we have already dwelt upon. Finally, we should bear in mind that into every plan of rest treatment, even the most rigid, exercise must sooner or later enter, and that exercise in some form or other must be persisted in subsequently.

REST IN NEURASTHENIA TERMINALIS

When neurasthenia persists for a long time, and especially if it be profound, it no longer remains a purely functional disease. Prolonged and persistent derangement of function is inevitably followed by **tissue changes.** A heart that is constantly overacting, that is subjected to repeated and violent attacks of palpitation or perhaps more or less persistent tachycardia, may undergo hypertrophy; subsequently degeneration of the cardiac walls and dilatation may ensue. Similarly, changes, degenerative in nature, take place in the blood-vessels. Actual organic changes also occur in the digestive tract. How readily gastric catarrh becomes superimposed upon a pure gastric atony, we have already seen, and if gastric catarrh persist sufficiently long, the function of the stomach may become permanently deranged. That alterations also occur in other structures, such as the muscles, there can be no doubt; indeed, not

even the bones are exempt. The changes in the muscles and bones are analogous to those seen in the blood-vessels; they are those of premature senescence. The muscles of the limbs become flat and flabby, while the changes in the cranium and face suggest the shrinkage of old age. Like the lesions of senescence, the changes here described are permanent in character, and this fact is of the utmost importance as regards prognosis and treatment. The clinical picture presented is that of a profound and chronic neurasthenia, to which I have given the name of **neurasthenia terminalis.** It is probable that the lesions are the result not only of persistent nervous and physical overstrain, but also of the various toxic substances present in the blood themselves, the result of excessive or perverted tissue metabolism. The presence of waste products in excess easily explains the existence of degenerative changes in the vessel-walls and in the organs, as general arteriosclerosis, sclerotic changes in the kidneys, and perhaps changes in other organs, including the nervous structures.

Terminal neurasthenia is established, as a rule, only after a simple neurasthenia, profound in character, has existed for a number of years. Occasionally, however, it comes on in a relatively short period; especially is this the case when the cause of the neurasthenia has been one acting with great violence and attended by profound shock. I have seen terminal neurasthenia now and then established in the course of a few months after railroad or elevator accidents of great severity. Another important factor in its development is the age of the individual; the disease being more readily induced in persons at or beyond middle age. It is, however, occasionally seen in young persons; thus it is met with not infrequently in the breakdown of athletes who have persistently overtrained.

The **prognosis** in neurasthenia terminalis is, of course, never so favorable as in neurasthenia simplex. There are forms so grave that the degree of improvement possible is very limited. Nevertheless, profound as are the symptoms, some improvement, and at times very marked improvement, follows a properly adapted and elaborate plan of treatment.

The **treatment** by **rest** must be **modified** in several important particulars. First, it must be pointed out that absolute rest, in

neurasthenia terminalis, is not devoid of danger. Great and persistent weakness may ensue if a patient with terminal neurasthenia remain persistently in bed for a long time; indeed, through the injudicious application of rest, an individual still able to be about and otherwise capable of considerable improvement may be converted into a bedridden invalid. The mere employment of massage and electricity may not suffice to prevent this result. Rest in such cases should never be absolute, save for a very short time. The patient should be permitted to get out of bed and to exercise gently about the room once or twice daily soon after beginning treatment—sometimes within a few days. In other words, in addition to massage, **active exercise,** though small in amount, must be added to the treatment. It is important also to bear in mind that these patients frequently do not bear massage well; even when not vigorous, massage may excite rather than soothe, or may increase the fatigue sensations. For this additional reason exercise should be employed early. Indeed, in pronounced terminal neurasthenia, exercise, gentle in character, should be instituted in the beginning; **partial rest methods** only should be employed at first, and as the treatment progresses the amount of rest may be cautiously increased; but let me repeat that it should never be made absolute for a prolonged period.

It is further important to bear in mind that the other physiologic methods at our disposal cannot be used so vigorously as in the case of simple neurasthenia. This is especially true of the **bathing.** As a rule, the latter must be limited to a warm sponge bath daily. It is but rarely possible to use cold douching or spraying. The patients react badly and are easily depressed.

Finally, rest methods should be pursued in terminal neurasthenia for a **very long time,** and, after the greatest possible improvement has been attained, a careful hygienic plan of living should be adopted, which the patient should follow for the remainder of his days.

The cases of terminal neurasthenia in which the patient has been bedridden for a number of years are, of course, those which present the greatest difficulty in treatment, and yet remarkable victories may be gained, even under these circumstances, provided that all of the conditions necessary to a successful rest treatment be complied with by the patient and the patient's friends; among these

conditions, it should be added, **isolation** is of the utmost consequence.

In cases in which the patient has been lying in bed for so long a period that exercise has become next to impossible, gentle bathing and gentle massage should of course be instituted, but most important of all is the stimulation of the **excretion** of waste products. In terminal neurasthenia the deficient thirst, already observed as a prominent symptom of simple neurasthenia, is most pronounced. The patient consumes but small quantities of liquids as well as grossly insufficient amounts of solid food. The first indication therefore is the **free ingestion of liquids**—milk and especially water. Gentle saline laxatives and at times irrigation of the bowel should be employed. At the same time the general **dietetic** principles already considered in discussing the treatment of simple neurasthenia should be applied. Lycetol, piperazin, the lithia waters, or the milder salicylates, salophen, or aspirin, should be administered. By these means, especially by the thorough washing out of the system produced by the free and continued ingestion of liquids, it may be possible to start the patient on the road to improvement. A slight gain is made especially in the lessening of the fatigue sensations, and, this being carefully followed up by the feeding and massage, it is frequently possible after a considerable time to get the patient out of bed. **Exercise,** very gentle, of course, can then be instituted and a marked degree of improvement—a relative cure—be brought about.

REST IN THE NEURASTHENIA OF MIDDLE LIFE

The neurasthenia of middle life differs in several particulars from the neurasthenia of youth and early adult life. In middle life, nutrition is no longer so active as in earlier years. Metabolic and tissue-forming processes are on the eve of involution. Strains are less well borne, reaction is less prompt, repair is less complete. If therefore at this period the organism be subjected to unphysiologic conditions, to overwork, to insufficient sleep, to social dissipation, to sexual excess, or to other exhausting factors, a condition of more or less profound nervous exhaustion is induced. Further, this

exhaustion is as a rule very persistent; it always lasts a number of months and not infrequently several years. In women its symptoms are commonly confounded with the **menopause.** The relation between the neurasthenia of middle life and the menopause is, however, merely one of concomitance. Sexual involution is a perfectly physiologic procedure and does not of itself induce neurasthenia. Further, the neurasthenia of middle life is not by any means limited to women, but occurs quite frequently in men. The symptoms are those of ordinary simple neurasthenia, to which in women the signs of the menopause may be added. The symptoms may, it is true, be accentuated at the times of the menstrual epoch, or may be influenced by metrorrhagia or other complications, but in a large number of neurasthenic women in middle life, the menopause plays no rôle whatever.

Applying **rest principles** to the treatment of this condition, we should bear in mind, first, the diminished activity of the nutritive processes; secondly, the tendency of the symptoms to persist for a long time; and, thirdly, the tendency of women at middle life to accumulate fat. In response to the first indication, we should whenever possible institute **full rest treatment;** that is, continuous rest in bed. For patients whose circumstances, pecuniary or otherwise, make a full rest treatment impossible, **partial rest methods** may be instituted, but, as might be supposed, these are far less efficacious; as a rule, they yield a very imperfect result. In many cases, indeed, no impression whatever can be made upon the symptoms. Strict rest methods, elaborate and detailed, are required in the larger number of patients. Secondly, the rest treatment must be **prolonged.** We soon notice that our patient reacts less readily and gains more slowly than does the younger neurasthenic. The various symptoms are not only persistent but often tenacious and obstinate. Absolute rest, careful massage, the thorough washing out of the tissues by the free ingestion of liquids, the use of electricity, and, especially, the carrying-out of rigid isolation are the means which must be employed. They must, as a rule, be extended over a long period—three or four months or more. In some cases the treatment should be followed by partial rest methods with persistent exercise for many months longer.

Many women who are neurasthenic at middle life, like younger patients, are very thin and much below weight; others, however, tend to accumulate fat, and in these cases the diet should be so regulated as to avoid this disadvantage. It is not difficult to bring about all the benefits of overfeeding without a needless accumulation of flesh. The carbohydrates and hydrocarbons—the starches, sweets, and fatty foods—should be given in moderate quantity and in some cases they should be reduced to a minimum. The great value of skimmed milk should also be borne in mind.

REST IN THE NEURASTHENIA OF OLD AGE

As we approach the latter period of life, that ebb in the tide of nutrition which begins in middle life becomes gradually more and more pronounced. Little by little the ability to expend energy in large amount is diminished. It is hardly necessary to state that the man of sixty or seventy is no longer able to do the mass of work of the man of thirty or forty. Changes inevitable, physiologic and consequent upon life itself, gradually diminish the power for quantity of work. We are hardly called upon here to enumerate the changes that take place in the tissues as the last decades of life are reached, to dwell upon the alterations in the blood-vessels, the wasting of the muscles, the brittleness of the bones, the atrophy of glandular structures, in short, the degenerations, atrophic, sclerotic, and fatty, met with in old age; nor should it be necessary to point out that in old age nervous exhaustion can very readily be induced.

The problem of **treatment** in the neurasthenia of old age is essentially a problem of physiologic living. As a matter of course, **rest** must be employed, and yet, for obvious reasons, rest should not be absolute or unduly prolonged. The treatment is essentially that of neurasthenia terminalis (see pp. 82 et seq.). As in the latter affection, continuous rest for long periods is not devoid of danger. The weakness of senile neurasthenia may be increased if rest be recklessly enjoined. Here again we are confronted by the question of rest and **gentle exercise** properly proportioned. As a rule, a very large amount of rest—rest but little short of continuous rest—is well borne, provided it be broken by short periods of sitting up

out of bed or walking about the room once or twice daily. As soon as practicable, exercise in the open air, either walking or carriage-riding, is to be undertaken, and later on this exercise is very gradually to be increased.

Massage, so useful in other forms of neurasthenia, should in old age be used with much discretion. It must indeed be begun in a tentative way; it should at first be very light and not too deep. Should unpleasant sensations, faintness, dizziness, or restlessness follow, it must, of course, be discontinued. By many old people, however, massage is well borne, and in such cases continuous rest in bed may for a time be instituted. **Bathing** should be limited, as a rule, to the daily warm sponge bath between blankets. The general principles indicated in the **diet** of simple neurasthenia, modified by special indications, should also be followed. Full feeding should be practised, but great care is necessary not to overfeed. The quantity of food should at first be relatively small and should only be increased very gradually. Milk, as in other forms of neurasthenia, is of great value. Errors of digestion, constipation, the gouty diathesis, must be borne in mind. In the way of medicines, the simplest and most necessary only should be employed. These have already been fully considered. Hypnotics, it should especially be remembered, should be used very cautiously, and in the beginning in tentative doses only.

Little by little the amount of rest should be diminished and the hours of **outdoor living** increased, but in many cases a more or less permanent adherence to measures embodying early going to bed, late rising, and rest during the middle of the day will be found necessary. While senile neurasthenia offers, on the whole, a much less promising field than other forms, it is remarkable how great a degree of improvement can frequently be attained, and this improvement is often synonymous with an actual prolongation of life.

THE NEURASTHENOID STATES

Thus far we have discussed rest methods in relation to neurasthenia alone. It will be necessary to say a last word as to the exact position which neurasthenia occupies toward related states. At the

present day there still exist, not only in the mind of the general practitioner, but even in the minds of specialists, the most vague and ill-defined notions concerning neurasthenia. Not only do we hear from clinicians of the highest standing allusions made and views expressed in regard to neurasthenia which disclose that this all-important affection has never received serious attention or study at their hands, but this is true to a very large extent even of neurologists and alienists. A striking illustration of the truth of this statement is furnished by the treatise of Binswanger on the pathology and therapy of neurasthenia, which made its appearance in Germany in 1897. This writer does not hesitate to say that under neurasthenia we are to group all neuropathic appearances which rest on a basis of general functional disease of the nervous system but which cannot be placed in the same category with the fully developed psychoses and neuroses because of their incomplete character. Surely the pages of medical literature have never before proposed as the definition of a well-defined and well-known syndrome, such as neurasthenia certainly is, terms more vague or more unsatisfactory. It is largely because neurasthenia to the superficial observer seems uninteresting that it is so little studied, and yet it is an affection so common, the number of cases so large, that we certainly owe it to ourselves to obtain clear, if not elementary, notions of this disease. Binswanger's position is due to a fundamental error. In an article on "Neurasthenia Essentialis and Neurasthenia Symptomatica," published in "The Alienist and Neurologist" (October, 1897), I pointed out that in studying neurasthenia we must be careful to separate it from various other morbid states. The latter resemble it superficially but differ from it radically. Among them are, first, the various forms of hereditary neuropathy—those states which are expressive of hereditary degeneracy and which manifest themselves, in some cases, as constitutional chronic nervousness, in others as the insane diathesis, and in others still as larvated or incompletely developed forms of various neuroses and psychoses. It at once becomes evident that these states have no relation with true neurasthenia. They only superficially resemble it, and they do not constitute well-defined diseases, but are merely **neurasthenoid states.** This is also true of the vague nervous symptoms which

are present in the long prodromal periods of various psychoses; they are **neurasthenoid,** never truly neurasthenic; it is a mistake, for instance, to say that a patient who passes into melancholia after a long prodromal period of nervous and hypochondriacal symptoms has had a neurasthenia which has deepened into melancholia. The patient has merely passed through a neurasthenoid prodromal period. As a matter of clinical fact, neurasthenia simplex never eventuates in mental disease.

It is not difficult, as a rule, to distinguish between neurasthenia and neurasthenoid states. In neurasthenia we have always the typical fatigue syndrome. There are present always the persistent diminution of nervous energy, irritability, mental and physical, generalized fatigue sensations, local aches or pains, ready exhaustion of the special sense-organs, atony of the various viscera, and the like; in short, the symptoms which have been outlined on page 24. They are essentially those of **chronic fatigue,** and to this, as already stated, I have applied the term of 'the fatigue neurosis'; to this conception the term neurasthenia should be limited.* Any nervous disorder in which this syndrome is absent is not one of true neurasthenia but of some spurious or symptomatic form. Care should, of course, be exercised not to ascribe undue value to any of the secondary or adventitious symptoms that may be present in a given case. Besides, the neurasthenoid states all present symptoms which, when taken together with the clinical and family histories, render a differentiation from neurasthenia readily possible.

These considerations are of great practical importance; the differentiation of the neurasthenoid states from neurasthenia has to do first with **prognosis,** secondly with the institution of **appropriate treatment.** It enables us to select cases for rest treatment, or to exclude cases from that category, with considerable accuracy. Rest treatment is admirably adapted to cases of simple neurasthenia; of necessity it is less adapted to the neurasthenoid states, promises less and accomplishes less. In constitutional nervousness, for instance, the organism is permanently weakened, its resistance to depressing influences of all kinds is lessened, and, under unfavorable conditions, serious

* For a full description, the reader is referred to the article on neurasthenia by the writer in the "Text-Book on Nervous Diseases by American Authors."

nervous or mental disturbance may develop. The patient is usually, but not always, of slight and delicate physique. Sometimes various stigmata of degeneration are present. Frequently there is a history of delayed and defective dentition, of a tendency to delirium or convulsions in childhood, of disturbed sleep, of night terrors, of excessive dreaming, or of somnambulism. Frequently a history of excessive illness in childhood is present and is significant, other things equal, of feeble resistance to infection. Puberty at times makes its appearance too early, at other times it is much delayed, and in females it is established with difficulty and with much general disturbance. School is attended with but moderate success and study is frequently interrupted by illness. Notwithstanding, the patient often presents a history of unusual precocity, and yet as adult life is approached his capacity is found to be limited, barely attaining mediocrity. Too often he is relegated to the rank of the incapables. Lack of persistence, incomplete undertakings, change of plans, and spasmodic efforts are prominent in the personal history. At the same time, the physical feebleness is demonstrated by the tendency to 'catching cold,' to catarrhal affections, or to more serious disorders, such as tuberculosis. As a rule, the patient is thin and below weight; less frequently he is obese and anemic. That such a patient should present various neurasthenoid symptoms, goes without saying; he is limited both in the quantity and quality of his work, he reacts inordinately to impressions, mental or physical. Slight efforts exaggerate his nervousness, slight causes lead to fever and disproportionate constitutional disturbances. He is excitable, unstable, defective in inhibition.

Constitutional nervousness is usually congenital, though it may be acquired by vicious and unhygienic conditions during the early developmental years. That various factors of heredity are present, is not surprising. Nervousness, headaches, neuroses of various kinds, alcoholism, tuberculosis, and occasionally insanity, are noted.

True neurasthenia may become superimposed upon constitutional nervousness, or the mere strains of existence may so exaggerate the patient's symptoms as to demand medical care. It is clear that the only means at our disposal is an application of **rest principles** with **exercise, hydrotherapy,** and **appropriate feeding.** Occasionally a full and radical rest treatment is followed by decided and persistent

improvement, and yet, as already remarked, the improvement is frequently quite limited.

It is always necessary to apply carefully the principles of hygiene and the various physiologic methods. The life of the patient must be regulated judiciously, especially as regards work. The amount of the latter, as well as its character, should be determined with care; the use of stimulants, alcohol, tea, coffee, and tobacco should be forbidden absolutely. Abundant hours for sleep, a liberal diet, regular bathing, and exercise in the open air must also be insisted upon.

Other neuropathic states, such as constitutional melancholic depression and the developmental periods of the insanities, offer similar problems. The important point is, after all, to distinguish clearly between these states and neurasthenia. The diagnosis should not be difficult, and if doubt arises, the opportunities offered for close observation by rest treatment cannot permit such doubt long to continue.

NEURASTHENIA SYMPTOMATICA

Similar remarks apply to the spurious neurasthenia which results from **visceral** or **general somatic disease.** It is conceivable that serious local disease—for example, organic disease of the stomach or pelvic disease—should weaken the entire organism, and with it the nervous system, and that various signs of nervous weakness should be present is but natural; but these signs do not make up that disease which we know as neurasthenia simplex. They are symptoms of nervous weakness such as accompany other diseases, either local or general. They are seen, for instance, in phthisis, in chlorosis, in the various anemias, in the toxemias due to infection or metallic poisoning, and in other grave disturbances of nutrition; but they form in such cases a very subsidiary and very unimportant group of the symptom-complex. At most, they constitute merely a **neurasthenia symptomatica.** Here again the diagnosis is to be made, first, by the absence of, or departure from, the typical fatigue syndrome; and, secondly, by a careful and systematic internal examination. The view was formerly entertained that various nervous disorders, and among them neurasthenia, were the direct result

of **pelvic lesions.** However, an increasing knowledge has not borne out this belief. It is found that the nervous symptoms caused by pelvic disease are quite limited. There is present pelvic pain, pain referred to the back, hips, and thighs, together with more or less marked impairment of the general health, but the symptoms do not constitute a nervous disease, and least of all neurasthenia. They are part of the pelvic disease itself and are directly symptomatic of it.

Not infrequently a course of **rest treatment** is of value in preparing a patient for a pelvic operation; more frequently it is of value after the operation, and if carried out radically may add greatly to the improvement of the patient's health.

CHAPTER IV

HYSTERIA

Hysteria a Well-defined Disease. Psychic or Higher Cortical Character of the Symptoms. Sensory, Motor, Visceral and Mental Phenomena. Etiologic and Pathologic Factors. Treatment by Rest and Physiologic Methods; Suggestion. Attitude of Physician to Patient. The Nurse. Auxiliary Measures—Feeding, Bathing, Massage, Electricity. Treatment of Special Symptoms.

THE NATURE OF HYSTERIA

In order to discuss intelligently the treatment of hysteria, it will be necessary, as with neurasthenia, to analyze its symptoms and to acquire a few fundamental ideas as to the nature of the affection. We must first divest ourselves of the all too common idea that hysteria is a pretended disease. It is a genuine affection, the symptoms of which are in no sense assumed; indeed, many of them exist without the patient's knowledge. Further, the symptoms of hysteria, though presenting great individual variability, consist of sensory, motor, psychic, and visceral phenomena so definite in character that, taken together, they constitute a distinct, well-outlined clinical whole.

We must next divest ourselves of the popular belief that there is a relation between hysteria and disease of the pelvic organs. True, the name—now too firmly established in medical literature to be altered—is based upon the idea of a causal relation between disease of the uterus and the nervous symptoms; and this absurd interpretation has held sway since the very dawn of medicine. The present generation, however, has recognized hysteria as an independent functional disease of the nervous system bearing no relation to the pelvic organs, and occurring in the male almost as frequently as in the female. The neurologist, and, it should be added, the general practitioner, were among the first fully to appreciate this fact, while

gynecologists have only reluctantly and recently abandoned this old stronghold of medical superstition.

Symptomatology

The symptoms of hysteria are distinguished by the all-important fact that they bear a distinct **psychic** impress. Throughout, they point to involvement of the higher centers, namely, the cerebral cortex. Although it cannot be maintained that the disturbance is limited to this region, inasmuch as the evidence points to a general participation of the nervous system, the fact of dominant cortical or psychic involvement becomes of supreme importance from the standpoint of treatment. A brief consideration of the symptoms makes this fact of cortical involvement clear.

The morbid manifestations are separable into sensory, motor, psychic, and visceral disturbances. The disturbances of **sensation** may present themselves in the form of anesthesia, hyperesthesia, or paraesthesia. They are especially characterized by the fact that they bear no relation to nerve distribution or to spinal segmentation. Thus, a patient may present an **anesthesia** of the hand investing the latter like a glove; such an anesthesia is, indeed, spoken of as a glove-like anesthesia, and obviously bears no relation to the facts of nervous anatomy. A similar loss of sensation may be present in the foot and leg, and is then spoken of as a stocking-like anesthesia. Again, an anesthesia may involve merely a segment of a limb; thus, it may extend from the wrist to the elbow, the parts below and the parts above being entirely normal. In such an instance we speak of a segmental anesthesia. It may, on the other hand, be limited to an irregular patch upon the trunk, limbs, or face; such an instance is spoken of as geometric anesthesia or islet-like anesthesia. Here again it is evident that we have to do with an anesthesia that is independent of spinal segmentation or of nerve distribution, and must therefore be referred to some disturbance of the cortex. Quite frequently it involves the entire half of the body, constituting a hemianesthesia; very rarely it involves the entire body or almost the entire body. In both instances we are again forced to refer the disturbance to the cortex, as neither the sharply defined hemianesthesia nor the so-called total anesthesia can be referred to anatomic

lesions of nerves or cord. It may be added that the sensory losses of hysteria usually involve all forms of sensation, but in certain rare instances, disassociated or partial sensory loss may occur; *e. g.*, loss of the pain sense or of the temperature sense, with preservation of the tactile sense. Most frequently there exists merely a diminution of sensation to all forms of stimulus; *i. e.*, incomplete perceptive loss involving all classes of sensation, and termed technically a hypoesthesia or **hypesthesia.**

The **hyperesthesias** of hysteria manifest themselves most frequently as isolated and oval-shaped patches of excessive sensitiveness in various situations. The patient's reaction, when such an area is touched, is such as to indicate that the hyperesthesia is painful; in other words, added to a mere tactile hyperesthesia, there is also **hyperalgesia.** The areas may be found upon any portion of the trunk or limbs, though they are most frequently met with in certain situations; especially in a small oval area over the ribs, just below the mammary gland, and another oval area immediately over the groin. The first is usually spoken of as inframammary tenderness, and the second as inguinal tenderness. Much confusion has been caused by the mistaken term 'ovarian tenderness.' The hyperesthesia, as a brief investigation will show, is extremely superficial and limited to the cutaneous surface. It is never indicative of lesion of deep structures, and least of all of the ovary. In the case of inguinal tenderness, the superficial character of the pain can readily be demonstrated by the following simple method: The patient having been placed in the position for gynecologic examination, the index-finger of the left hand is placed immediately upon the painful spot on the groin. The index-finger of the right hand is then inserted into the vagina and its tip brought immediately below the tip of the index-finger of the left hand. Slight pressure between the tips of the two fingers now causes the patient to flinch and complain of pain, just as she does when the area of inguinal tenderness is merely pressed upon on the outer surface. Other portions of the abdominal wall are in turn included between the fingers, and by these means it can be readily demonstrated that the painful area is limited absolutely to the abdominal wall. The finger within the pelvis can manipulate freely the uterus and the adnexa

without causing the patient to give any evidence of pain, and the entire freedom of these structures from involvement of any kind is thus demonstrated. It would be out of place here to dwell upon the untold evils to which in former years the erroneous reference of inguinal tenderness to the ovary gave rise. It is not necessary to repeat the story of vicious local treatment and of mutilating operations, and, of what was even worse, the formation and fixation of the hysterical belief of the patient that she was the victim of some mysterious, interesting, and dreadful disease of the sexual organs.

Curiously enough, the areas of painful tenderness are found more frequently upon the left side of the body than upon the right. They are also met with quite frequently in the form of isolated patches over the spine or to one or the other side of the spine below the inferior angle of the scapula. Not infrequently they are found in small patches upon the scalp. In the latter situation they are frequently so small that they can be covered by the finger-tip and are frequently associated with spontaneous boring pain and then give rise to the familiar picture of clavus hystericus. Both inframammary and inguinal tenderness, as also spinal tenderness, may be associated with spontaneous pain, which, like the clavus of the head, may assume a deep and penetrating character. Signs of visceral disease, as has already been stated, are always absent, however. This point is of especial importance when the area involves the nipple and adjacent portions of the mammary gland itself. Not only is evidence of organic disease absent, but a careful examination of the patient will usually reveal numerous other evidences of the presence of hysteria. Patches of painful tenderness may also be found upon the various mucous membranes, more especially upon the mucous membrane of the vagina and of the rectum. In the case of the vagina, they are usually associated with the symptom of vaginismus, and in the case of the rectum they may give rise to great suffering and distress, made worse whenever the bowels are moved. Painful areas of the rectum may at times lead to excision of portions of mucous membrane or other ill-considered and disastrous surgical interference. It is a fact not always borne in mind, that the areas of hyperesthesia every now and then involve synovial surfaces, and in such an instance will give rise to

an hysterical pain in the joint that may be mistaken for rheumatism or other form of arthritis or may even simulate tuberculous disease of the hip, of the knee, or of the ankle-joint. The joints of the upper limbs are less frequently involved than those of the lower.

The **special senses** are also frequently the seat of perversions and disturbances. The most familiar instance is that in which the **visual field** is concentrically diminished; that is, the peripheral portion of the retina is the seat of anesthesia. Every now and then the anesthesia involves the entire retina, and then gives rise to hysterical blindness; again, the anesthesia may be so distributed as to give rise to a hemianopsia. The latter may be bilateral and homonymous, and may simulate organic disease; it may even be binasal. As a rule, in the half of the retina in which vision is still preserved, the field is also found contracted. Another important symptom of visual hysterical anesthesia which should be mentioned, is the so-called reversal of the **color-fields.** In health the retina is not equally sensitive to the various colors in all portions of the field; thus, violet is perceived in a relatively small central area, green in a somewhat larger area, red in a still larger area, yellow in a still larger, and blue in a still larger area. In hysteria the area in which blue is perceived becomes exceedingly contracted, so that it falls within the area in which red is still perceived; that is, instead of the largest field being that of blue perception, it is now that of red perception—blue perception being so far diminished as to fall inside the limits of the field for red. This symptom is merely one of anesthesia. The sensitiveness of the retina to violet diminishes or disappears first, then to green, then to blue, the red persisting until the last. It is of importance also to note that hysterical visual loss is, as a rule, most pronounced on the side in which hemianesthesia or other hysterical loss is found upon the general body-surface.

Just as sensory losses referable to the eye are met with in hysteria, so do we meet with hysterical losses referable to the **ear,** and, it may be, to the other special senses. Hysterical deafness is not infrequently met with as an accompaniment of hysterical hemianesthesia. It is usually incomplete, the hearing being merely impaired. Bone conduction is well preserved. As a rule, there is anesthesia

of the external auditory meatus, frequently of the drum, and at times of the auricle.

Similar remarks apply to the senses of **smell** and of **taste.** Loss of taste or smell, generally one-sided and associated with hemianesthesia, may be met with. It is not necessary to dwell upon the evident psychic character of these phenomena.

The **motor symptoms** of hysteria manifest themselves in the form of paralysis, of spasm or contraction, of tremor or of incoordination. Occasionally also great psychomotor storms sweep over the patient and give rise to the familiar picture of the hysterical convulsion. Like the sensory symptoms, the motor symptoms are not referable to any lesion either of the peripheral nerves or of the spinal cord. The **paralysis** may be exceedingly limited and may involve merely a limb or a portion of a limb, or it may involve homonymous portions of the body and give rise to a paraplegia, or it may involve one-half of the body and give rise to an hemiplegia; very rarely a general paralysis, involving both sides, is met with. Not infrequently a local hysterical palsy is associated with a contraction of opposing muscular groups; indeed, this association with contraction is often very marked. At times, however, the palsy is flaccid in type. Hysterical paralysis may vary from a mere paresis to a total loss of power. As a rule, the deep reflexes are increased, while the skin reflexes are abolished. Usually the nutrition of the paralyzed muscles or limb is unaffected, but in cases of long duration, some diminution in volume may be observed; reaction of degeneration is not present. It is important also to add that very frequently, if not usually, hysterical paralysis is accompanied by more or less anesthesia, the anesthesia being limited to the part paralyzed. Occasionally also circumscribed or diffused edema with a bluish or mottled discoloration of the skin—the so-called 'blue edema' of the French—is noted in the paralyzed part. This blue edema, it may be stated in passing, may also be met with in parts that are not paralyzed. Frequently hysterical paralysis comes on suddenly. It may, however, begin as a slight weakness, and it may for a time be progressive. Not infrequently it is of very transient duration, or it may recur at intervals, espe-

cially if there be some profoundly disturbing cause, such as undue emotional excitement, effort, or sudden fatigue. Hysterical paralysis may last for a very long time. Some cases recover promptly; others only after many months. Cases are also met with in which the paralysis seems to be permanent. Recovery when it begins is usually progressive, and at times it is sudden—following, it may be, some strong mental impression.

The palsies of hysteria, as a rule, bear vividly the impress of their psychic character, though they often closely simulate organic disease. Thus, the hemiplegia of hysteria presents features which enable us to distinguish it at once from organic hemiplegia. The arm is most frequently flaccid or nearly so; at least it does not assume the position of secondary contracture usually met with in organic hemiplegia. The paralysis, again, is most marked in the leg, which is also somewhat stiff, but is dragged in walking as though it were a dead weight and absolutely helpless. The gait does not at all resemble the spastic gait of organic hemiplegia. The muscles of the face are never paralyzed—or practically never. This is also true of the tongue. Paralysis of the jaw, the patient not being able to chew or to close the mouth (palsy of the masseters and temporals), has been very rarely noted. From what has been said, it can almost be inferred that hysterical hemiplegia is very frequently associated with hemianesthesia. The anesthesia may also involve the eyes, and perhaps the other special senses.

Hysterical paraplegia also presents peculiarities which usually enable us to differentiate it from organic paraplegia, but it is not my object to go into these details here. The characteristic glove-like, stocking-like, or segmental anesthesia, the absence of involvement of the sphincters, the absence of bed-sores, etc., are facts that should be borne in mind.

The **contractures** met with in hysteria only rarely simulate the contractures due to organic disease. This is particularly true of the secondary contracture of hemiplegia. In hysterical paralysis of an arm, the arm may also be contracted and the position may be that of simple flexion or of some bizarre contortion. This may also be observed in the leg, though usually here the tendency is to rigidity with extension. Frequently the position and gait closely simulate spastic

paraplegia of organic origin. The associated sensory and other stigmata, however, usually permit a diagnosis. Various other forms of contracture may also be noted; *e. g.*, less frequently of the muscles of the neck, and more rarely of the muscles of the face and tongue.

The **tremor** frequently observed in hysteria may consist of to-and-fro oscillations of variable rapidity; the rate, for instance, may vary from four to twelve in the second. Most frequently the rate varies from seven to nine in the second. As a rule, the extent of the movements increases during effort. It resembles neither the tremor of paralysis agitans nor the coarse movements of insular sclerosis.

Incoordination of movement is rather rarely met with in hysteria, but when present it gives rise to the picture of hysterical ataxia or **astasia abasia,** as it has also been termed. The incoordination usually becomes evident only when attempts are made to stand or to walk. As a rule, when the patient is lying down or sitting in a chair, there is power to move the legs normally in all directions. However, when the patient tries to get up, the ataxia is at once manifested, and if he tries to walk, it usually becomes very pronounced. Hysterical ataxia differs, of course, in degree; but, as a rule, when present, it is quite marked. If the ability to walk be at all present, the gait in no way resembles that of locomotor ataxia. Great irregularity of gait, with, it may be, backward and forward or grossly bizarre movements of the trunk and arms, is the usual association of phenomena.

Among the **visceral disturbances** of hysteria, we have to note especially vomiting, rapid pulse, vasomotor phenomena, rapid breathing, cough, yawning, retention of urine, anuria, phantom tumor, aphonia, and spurious aphasia.

The hysterical **vomiting** is often associated with entire loss of the desire for food. The patient, as a rule, reveals in her history and in her conversation the fact that she entertains some profound idea in regard to an inability to digest certain foods or all forms of food under certain conditions, or she is impressed with the idea that she has some peculiarity or disease of the stomach, or, it may be, of the liver or some other internal organ. There is, it need

hardly be added, in such cases an absence of all evidence pointing to organic disease—at most a mild degree of atony with slight gastric catarrh may be present, but most frequently there is nothing.

Increased frequency of the pulse is often observed as a complication of hysteria. Again, there is no evidence of organic disease of the heart, blood-vessels, or other organs. The tachycardia is frequently associated with flushing, with localized edema, with the blue edema already mentioned, or with erythema. Not infrequently there is present a condition of extreme pallor of the surface, especially of a paralyzed limb, so that the latter will not bleed to pin-prick.

In hysterical **rapid breathing,** the rate of respiration is usually very high; it may even reach ninety to the minute. It is frequently unassociated with any change in the rate of the pulse; there is no dyspnea, nor is there any evidence of cyanosis. It need hardly be added that there is absolutely no evidence of cardiac or pulmonary lesion. **Cough,** when present in hysteria, is not accompanied by any physical signs. It may assume bizarre forms, imitating the crowing of a cock, the barking of a dog, etc. If **yawning** be present, the act is usually very greatly exaggerated and very prolonged.

Among the rare somatic disturbances observed in hysteria, **fever** should be mentioned. While exceedingly rare, there can be no doubt that true hysterical fever is every now and then met with. When present, it always throws doubt, for a time at least, upon the existence of a simple and uncomplicated hysteria.

The **sphincters,** as a rule, escape in hysteria, though quite frequently hysterical retention of urine is met with. A rare symptom, which should be mentioned, is hysterical **anuria,** in which for a given time the secretion of urine is greatly diminished or almost completely suppressed. Strangely enough, the grave symptoms usually associated with suppression of urine are conspicuous by their absence. Much more frequent than anuria or diminution of urine, is an excess of the secretion—**polyuria.** Very large amounts of pale urine may be voided.

Not infrequently the **abdomen** becomes greatly distended in hysteria, the outward appearance simulating pregnancy; at times this distention is irregular in outline and extent, and then gives rise to 'phantom tumors.' Percussion and palpation soon reveal the nature

of these tumors, but it should be borne in mind that sometimes phantom tumors owe their existence to localized spasm of the abdominal muscles. Occasionally such 'muscle tumors' are found in other situations; *e. g.*, over the pectorals.

Psychic Symptoms.—The various symptoms thus far considered, in themselves indicate a profound alteration of the psychic state, and when we study the patient's **mental condition** directly, special psychic symptoms present themselves which are both interesting and important. There is recognizable first an unusual emotional mobility, together with defective emotional inhibition. Phases of depression or phases of unusual exaltation may occur without adequate cause. In addition, the mind is impressionable to an extreme degree. The patient reacts abnormally to suggestions of various kinds, and these suggestions may have their origin in conditions within, or in circumstances without, the person of the patient. For instance, at times the physical symptoms of hysteria appear to be the result of illusions received from the general body-surface, from the muscles, and from various viscera. In health, visceral and organic sensations generally are ignored, and enter but little into the make-up of consciousness. In hysteria the patient appears to be not only more susceptible to such sensations, but the latter present themselves in such an illusive form as to be misinterpreted. This being the case, it is not strange that a patient should believe firmly in the reality and seriousness of her various symptoms, and that these should vary greatly from time to time. The most marked phenomena may thus result from an unconscious autosuggestion—nausea, vomiting, paralysis, blindness, etc. Similarly, profound impressions from without—the sight of paralysis, convulsions, or other affections, the recital and accounts of diseased states by friends or acquaintances—lead to manifestations equally profound. The contagiousness of hysteria embraces a story so well known and so old as to need no repetition here. Every one who has treated hysteria has seen instances of it. With a neurologist it is an all too common observation. We should remember, of course, that not all cases nor all symptoms of hysteria are due to suggestion. Many of the symptoms arise spontaneously and without apparent

cause, and may even, as we have already stated, exist without the patient's knowledge.

It is not surprising that the mental state of hysteria should be largely introspective, and it is easy of comprehension that the relation of the patient to her symptoms and to the outside world should appear greatly distorted. Her symptoms and their gravity are greatly exaggerated. No one was ever so ill before or ill in the same terrible way. She becomes egoistic in every sense, and often to an extreme degree. The belief in the dreadful character of her illness leads to an inordinate craving for sympathy—a craving which in its selfishness does not hesitate to sacrifice nearest and dearest relatives or even to wreck whole families. She often preserves a memory that is painful in its minuteness, and she loves to dwell upon the history of her case, to recite and repeat endlessly the various symptoms and affections from which she has suffered, and to retail with endless elaboration her experiences with the various physicians she has consulted and the various cures through which she has passed. Many such patients are never happy unless they are under a physician's care, and they drift unceasingly from physician to physician and from surgeon to surgeon.

It needs but an intensification of these mental symptoms to indicate the existence of actual mental degeneration. Indeed, the form of **hysterical insanity** most commonly met with, is that in which the patient has acquired fixed delusions with regard to her various symptoms—delusions that occasionally lead to all kinds of surgical vagaries. Every practitioner can call to mind such cases. The wife of a physician, some years ago under my care, had been a victim of profound hysteria for many years. She had had both ovaries removed. Some time afterward, the symptoms being unrelieved, a hysterectomy was performed. Later on, distressing genital sensations persisting, the labia minora were amputated, and when she finally came under my observation, she had the fixed delusion that she had serious disease of the rectum and that this urgently required operation. It is needless to say that careful and elaborate examination of the rectum by a skilled specialist revealed this organ to be absolutely healthy. Another unfortunate victim had had both ovaries removed, and sub-

sequently at separate times had had both kidneys sutured. Later she declared that "one of her kidneys had again become loose, and would have again to be sutured." Hysterical stigmata were pronounced. Another patient having been told by a physician that her symptoms were due to her teeth, had had her teeth removed and artificial teeth substituted. Relief not being obtained by this means, she passed from the hands of one dentist to another until she had accumulated thirteen sets of artificial teeth. Her symptoms persisting, she transferred her delusive ideas to her eyes, and then began making the round of the oculists. Glasses after glasses were prescribed, but all with a similar negative result. Next she became convinced that it was her stomach which was diseased; medicines, lavage, and diet after diet were tried without effect. When seen by me, mental degeneration had so far advanced as to necessitate commitment to an asylum.

On the whole, however, it is quite infrequent for such serious or profound mental degeneration to supervene. In most instances the patient remains for a time with shifting symptoms and shifting ideas as to illness, and finally, under favorable conditions, recovers. It is only when the ideas become fixed and persist unchanged for a long time that grave psychic disorganization is to be feared.

The mental symptoms of hysteria are, as might be expected, more marked at certain times than others. Indeed, frequently for long periods they are quiescent; at other times, again, they become exceedingly pronounced. Quite frequently they are paroxysmal in their onset, and then lead to the familiar picture of the so-called **hysterical attack.** Hysterical attacks vary greatly in the symptoms which they present. They may be limited to comparatively slight emotional storms, attended by weeping and by laughter, or by transient alterations of speech and conduct in which emotional factors are so dominant that even the laity recognize the attacks as hysterical. Instead of being slight, the attack may be profound, and may then assume definite and fixed characters. It is not my object, nor indeed is this the place, to enter into a detailed description of the typical convulsion. Suffice it to say that the well-defined hysterical paroxysm is usually preceded by various emotional signs indicative of its

approach. The patient as a rule becomes moody and depressed, avoids her family, keeps to herself, is irritable, presents lessened emotional inhibition, weeps upon slight provocation or laughs from equally insufficient cause. This period may last for a few hours or for several days. The sleep is often disturbed by dreams, and dream-like hallucinations with delusive ideas may persist in a variable degree during the waking hours. The patient also frequently reveals her disturbed mental state by abstraction, by indifference to dress and to proprieties. The appetite may be lessened or perverted. At times she is agitated and restless. If hysterical stigmata have already been observed in such a patient, they may now be more evident or new ones may make their appearance. Sometimes a stigma, such as an inguinal pain, a clavus, or a globus, acts as the starting-point for the motor disturbances. The onset of the convulsion is attended by tonic spasm, during which the patient may present rigidity of all the muscles of the limbs and trunk. In contrast with the epileptic seizures, this phase of rigidity is, as a rule, quite prolonged. Sooner or later the tonic spasm is succeeded by clonic convulsions, and after a time these also subside and disappear. In contrast with the epileptic state, the patient is not unconscious, although she subsequently, as a rule, asserts that she has been so. Consciousness is at most somewhat perverted or but slightly submerged, so that not infrequently it is possible to rouse the patient and stimulate her to control her movements.

Such a picture as that given may constitute the entire attack. In more pronounced cases, however, these symptoms are followed by a period during which the patient contorts the body into various bizarre positions and makes all sorts of gestures and extravagant movements; many of them suggest volition and purpose. Later on these violent and irregular motions give way to dramatic and passionate attitudes, accompanied or followed by noisy weeping, lamentation, and distress. By this time the patient seems fully cognizant of her surroundings, gradually becomes quiet, and the attack subsides; frequently she sleeps. Hysterical attacks are variously modified. Occasionally ecstasy is manifested during the paroxysm; at other times it simulates somnambulism. In still other cases, catalepsy, lethargy, or hysterical sleep may develop.

Etiologic and Pathologic Factors

The foregoing considerations can leave no doubt in our minds as to the overwhelming predominance of psychic elements. It remains, however, to lay stress upon a fact which is all-important in the treatment of the disease. Hysteria is not an affection without a cause. There is reason to believe that in all cases profound **pathologic** and potent **etiologic factors** are at work. To begin with, many patients possess a **neuropathic heredity,**—there is a history of various nervous diseases or insanities in the ancestry and in collateral relatives,—and they frequently present in themselves the evidences of the neurotic constitution (see constitutional nervousness, page 89). Upon this fertile soil the strains of life may lead to the development of various nervous and mental affections, and among these to hysteria. Further, it is especially significant that among the exciting causes of hysteria are profound emotional and moral shock; and still more suggestive is it that trauma is one of the most powerful and one of the most common causes of hysteria. Of the truth of this statement, the extensive literature on traumatic hysteria is all-sufficient evidence. It is also noteworthy that the various toxemias induced by alcohol, lead, mercury, and the morbid states induced by drugs, are frequently the exciting causes of hysteria. Equally significant is it that hysteria now and then follows infectious disease, such as typhoid fever, influenza, and other exhausting affections. Every practitioner knows how frequently the condition is superimposed upon chronic disease; sometimes, indeed, upon disease of the nervous system itself. Time and again it is allied with neurasthenia; often, indeed, with organic nervous disease. That it follows surgical operations is also a not infrequent observation. In short, that there should be present evidence of general ill health, often vague and ill defined, is not surprising, especially in view of the etiologic factors so commonly noted. A spurious appearance of good health is now and then presented,—a clear skin, bright eyes, and flushed cheeks,—but more often the evidences of illness are patent to superficial observation.

These facts cannot but impress us, in spite of our ignorance of the intimate pathology of hysteria, with the gravity and the reality of the disease. It is probable, indeed, that the **pathology**

of hysteria is to be sought for in some somatic change, and that the nervous symptoms are merely a secondary outcome of this. It is quite possible, for instance, that various causal factors of hysteria lead to the formation of a toxin that deranges the functions of the nervous system, especially the action of the cortex. The action of such a toxin would differ only in kind and degree from the toxins that are efficacious in producing delirium, confusion, stupor, or other mental disturbances. While the existence of such a toxin is merely a matter of speculation, all the evidence points to a disturbance of the normal cortical action, and that such disturbance does not ensue without adequate cause is a legitimate inference. That this disturbance is purely functional, the changing and often fugacious character of the symptoms sufficiently demonstrate. It would seem as though the neurones of the cortex, in spite of their anatomic continuity with each other and with the peripheral neurones, —an inference justified at present by the researches of Apathy and his followers,—no longer maintain their normal physiologic relations with each other. In an hysterical paralysis of the arm, for instance, the neurones of the cortex have lost their physiologic continuity with the segments of the spinal cord in which lie the neurones controlling the muscles of the arm. A similar supposition assists us in the explanation of hysterical anesthesia; namely, a direct physiologic break between the peripheral and the central neurones. During the recovery which every now and then follows a profound mental impression, the neurones of the cortex are again brought into physiologic relation with the spinal neurones, and the paralysis of the arm or the anesthesia disappears. Instances of the sudden disappearance of palsies and anesthesia are so common as not to necessitate special citations of cases. It is not improbable that similar disturbances of neurone action will account for the other phenomena of hysteria.

THE APPLICATION OF REST TO HYSTERIA

The fact that in the larger number of cases of hysteria there are evidences of a general disturbance of health, often profound in character, and the fact that hysteria is so frequently complicated by neurasthenia, suggest at once the application of rest principles.

In cases in which the symptoms are at all pronounced, this treatment should be enforced in a **radical** manner. Partial rest methods, such as have been described as suitable for the milder forms of neurasthenia, are not equally applicable to hysteria; the accompanying supervision is usually altogether inadequate. The patient's emotional instability and inordinate susceptibility to suggestion, together with the great possibilities of harm-doing by well-meaning friends and relatives, indicate at once the necessity for **isolation.** Efficient isolation can rarely, if ever, be attained in the patient's own home.

It is further of importance at the outset, and as a matter of **mental therapeutics,** to warn the physician as to the necessity of circumspection in **studying** cases of suspected hysteria. In the first place, the history of the illness should, so far as possible, be elicited from the relatives or friends of the patient and in the patient's absence. In the second place, the study of the various physical stigmata should be conducted in such a manner as not to accentuate these in the patient's mind. As a rule, the diagnosis can readily be established without making too prolonged or too elaborate observations. I am quite confident that studies in which an anesthetic area is mapped out in great detail, or in which the limitations of the visual field are brought out during a prolonged and exhausting examination, have an ill effect upon the patient. An equal reserve should be exercised in the studies of the various painful hyperesthesias. It is unnecessary to press very hard or to press repeatedly over a painful area or to delimit its exact extent. Such a procedure is justifiable only when the significance or character of the pain is doubtful or when there is reason to suspect underlying visceral disease. As a rule, it is easy to exclude visceral disease. Indeed, the fact that such an examination results negatively is frequently a relief to the patient's mind. It is needless to say, in this connection, that the very manner in which the examination is made may give rise to **suggestions** beneficial to the patient. These suggestions need not necessarily be made in words; and while the physician is careful to recognize and to admit frankly the existence of the symptoms of which the patient complains, he can reveal

in his manner that he does not consider them serious; or he may remark that he has often met with similar symptoms, and has always seen them, under proper treatment, disappear. On the other hand, an hysterical patient is frequently jealous of her symptoms, and is anxious that the physician shall be impressed both with their severity and their reality, and it is therefore a mistake to minimize them unduly. Otherwise the patient will come to the conclusion that the physician does not understand her case, that he does not appreciate her condition, or that he has no sympathy with her or feeling for her, and thus her confidence may be shattered at the first interview. The proper examination of an hysterical person requires infinite tact, as much so, indeed, as does the subsequent treatment. Every such patient is anxious to detail her symptoms fully to the physician, and although the latter may already have obtained a full history of the case from the relatives, it is important that he should assume, at the first examination, the rôle of an interested and sympathetic listener. An increasing experience has convinced me of the importance of making a success of the first interview, and the patient must be allowed to talk freely, long, and uninterruptedly. Very gently, questions of a general character can finally be asked, and little by little the patient can be led up to the point of the medical examination. This should be conducted especially from the standpoint of internal medicine. Knowing as we do that hysteria frequently complicates and masks organic disease, the medical part of the examination assumes a great importance. The presence of the stigmata of hysteria can, as a rule, be established with the very greatest ease, and by methods which do not impress their existence upon the patient.

The **attitude** which is adopted by the physician in the beginning of the case, namely, that of friend and kind adviser, should be maintained throughout the course of the treatment. Except in the rare instances in which such a course shall deliberately be predetermined upon for special reasons, his suggestions as to the unimportant character of the nervous symptoms should not be made bluntly or brutally. As far as possible they should be indirect and allusive; and they should be repeated at subsequent visits. They can, of course, be made in various and numerous ways, by word and by

action, by silence and by inattention. After a time, as the treatment progresses, it is often wise to appear to ignore the existence of the various symptoms altogether; this is especially true of the sensory stigmata. Suggestions made too directly or too frequently may constantly keep the symptoms before the patient's mind and thus defeat the physician's object. On the other hand, the appearance of indifference must be avoided. The exact course applicable in a given case must depend upon the individual judgment, good sense, and tact of the physician. Of one thing, however, he should make certain, and that is that every visit that he makes to his patient leaves her with the impression that she is getting better and that she will inevitably be well.

The **nurse,** as in the case of neurasthenia, should be well trained in massage, in the various forms of special exercise, in the giving of baths, and in the administration of electricity; but for the successful management of hysteria, she must possess other important qualities. No matter how well she is trained or how great her experience, the physician should always, before introducing her to the patient, explain the nature of the case and to some extent enter into the details of the symptoms which are present. The nurse should not attempt suddenly to suppress or dissipate the symptoms; argument and forceful methods are equally disastrous and objectionable. She should merely endeavor by her demeanor and general conduct, as well as in her conversation, to keep up gently day by day, the impression that the patient will get well. On the other hand, she should not play the rôle of a sympathizing, pitying, or affectionate friend. How disastrous such a course is, need hardly be pointed out. Her mental attitude should be that of a calm, quiet, and cheerful companion, whose business it is to carry out faithfully and without modification the instructions of the physician. As can be inferred, the success of a given case depends largely upon the nurse. Even when the latter is educated, she is sometimes deficient in tact and therefore useless. The qualities which make a nurse successful in hysteria are often inborn; many nurses are incapable of acquiring them. Thus, some patients need a little sympathy; they cannot get along without it, and will not improve without it. In others

even the slightest show of sympathy destroys utterly the influence of the nurse and her control over her patient. Intimacy, personal conversations, and the undue exchange of confidences are equally subversive of the discipline of the sick-room.

The necessity for **isolation** is, as has already been pointed out, imperative—much more so, indeed, than in simple neurasthenia. All communications with friends or relatives, whether by letter or indirectly by cards, flowers, or gifts, should cease. No matter with what precautions such communications with the sick are surrounded, they inevitably do harm. Especially is this the case in the early part of the treatment; later, when convalescence has been firmly established, flowers, books, and the like, may perhaps be permitted.

The patient having been suitably isolated, **radical rest measures** should be instituted. The methods which have been elaborately detailed with regard to the treatment of neurasthenia by rest in bed (see page 48) should be followed closely; that is to say, in addition to rest in bed, we are to employ, in various degrees, **massage, bathing, electricity, exercise,** and **feeding.** To these measures we must add, as has already been sufficiently indicated, another—namely, **suggestion.** This measure plays a large rôle in the successful treatment of hysteria. Indeed, without it the most elaborate rest methods may fail.

In the majority of cases, the rest should be **absolute,** the patient being permitted to leave the bed only to move the bowels or void the urine. A simple **diet** should be instituted. As in neurasthenia, it should contain comparatively small amounts of the carbohydrates, the starches, and sugars, and but moderate amounts of the red meats. The white meats and the succulent vegetables should be used freely. Milk is, of course, an important factor, and should be given in increasing quantities, especially if the patient be below weight. Special conditions often demand special modifications of the diet, and the principles and methods already detailed in the consideration of the diet in neurasthenia are to be followed here (see pages 39 and 56). The expedients demanded by anorexia nervosa and other hysterical conditions of the stomach, are considered farther on. (See also volume VI.)

Massage should be given daily. The general principles indicated in the discussion of massage in the treatment of neurasthenia are also applicable here. It is important to bear in mind, however, that superficial rubbing, so often calmative and soothing in neurasthenics, is frequently distasteful and irritating to hysterical patients, especially when areas of painful hyperesthesia are marked. The massage should at first be gentle, and later on vigorous; it should be deep and directed to the muscles. The areas of painful hyperesthesia should at first be carefully avoided, but little by little these should be encroached upon, and, before the patient is aware of it, thoroughly included in the rubbing. Days and weeks sometimes are required before this can be accomplished. Thus treated, painful areas usually disappear; they are, to use the term prevalent among nurses, 'rubbed out.' (See also volume VII.)

Bathing should be instituted, at first, in the form of a simple sponge bath, between blankets, as it is given in neurasthenia. Later on, according to circumstances, douching, spraying, or the drip-sheet may be employed. Douching and spraying are of special value in the treatment of sensitive areas over the spine and other situations. If these areas do not disappear under massage, they will frequently yield to alternate cold and hot douching. (See also volume IX.)

Electricity also may prove of much value in given cases, as it is in the treatment of neurasthenia. It is to be employed in a similar manner. The slowly interrupted faradaic current is conveniently used to stimulate the flexor and extensor muscles of the limbs and the muscles of the trunk; it promotes the general nutrition and increases the general level of the muscular tone. The rapidly interrupted faradaic current is sometimes used as a local stimulant, and is often very efficacious in dispersing painful stigmata. At other times the constant galvanic current may be used for this purpose, the anode being applied over the painful area. Again, in cases in which these areas persist, they sometimes disappear rapidly under static electricity. Electricity, of course, also acts by suggestion. This is especially the case in the employment of the rapidly interrupted faradaic current, of the galvanic current, and of static electricity. We should remember, however, that sometimes electricity

is as suggestive of harm as it is of good. After an incautious electric application, the patient may complain of various obscure sensations, declaring that she has been made much worse, or perhaps has new symptoms, or symptoms from which she believes she will never recover. At other times, even when an exceedingly mild current is used, she will complain excessively of pain; indeed, she will not infrequently do this when the electrodes are not even connected with the battery. Further, the effect of an imposing apparatus is as likely to be bad as good. In respect to this, as to all other elements of the treatment, therefore, the question becomes finally one of good judgment in the individual case. (See also volume II.)

The foregoing outline of rest treatment in hysteria embodies merely a general sketch of the methods that may be employed; the variations may be as numerous as the vagaries of individual patients. It should here be emphasized, however, that it is greatly to the advantage of the patient if the treatment be restricted to comparatively simple means; over-elaboration in treatment, as in examination, defeats the physician's object. Indeed, other than simple means are rarely necessary for the successful treatment of even grave and long-standing cases.

Treatment of Special Symptoms

Special symptoms often complicate and retard the progress of the case. Indeed, the patient seems at times to center her thoughts on a single feature of her case,—a palsy, or a painful area, or nausea, or retention of urine,—and the skilful treatment of such a symptom becomes the key to success or failure. As a rule, the special symptoms become less marked or disappear as the general health of the patient improves. One by one they fade away under the combined influence of an increasing sense of physical well-being and skilful and constantly repeated suggestion. The fact, however, that certain stigmata are more prominent than others, makes it wise at times to give them special attention.

We have already considered the treatment of the **painful sensory areas** by massage, by hot and cold douching, and by various applications of electricity. They yield, as a rule, to these measures, espe-

cially if the latter be accompanied with the frequent and repeated suggestion that the pain and tenderness will pass away. Difficulties are occasionally presented by clavus, and at times by areas in the inguinal region or adjacent iliac fossa. While clavus usually yields to ordinary measures, we not infrequently find that medicines which act by suggestion are of value. A capsule containing a small quantity of starch or of boric acid, if administered with the statement that the pain will yield promptly after the capsule is taken, often proves efficient. Inguinal pain, because of the mental association between the surface pain and possible disease of the ovary or other structures, is at times exceedingly difficult to remove. Especially is this the case when the pain affects the right inguinal region or right iliac fossa. A vague knowledge of appendicitis is widely diffused through the community, and not infrequently a patient believes that he has appendicitis and insists upon operation. In such cases the attitude of actual organic disease may be assumed, the patient lying upon the back with the thighs, especially the right, drawn well up toward the abdomen, while pain and tenderness are often exceedingly persistent. 'Hysterical appendicitis,' however, gradually disappears, though a number of weeks may elapse before either the superficial tenderness is gone or before the patient abandons its false interpretation. For areas of paresthesia and anesthesia, electric treatment may prove useful. If the anesthesia be persistent, the dry faradaic brush may be employed.

If **paralysis** be present, the patient should be encouraged, as much as possible, to try to move the paralyzed member. As a rule the mental effort, even with the best intentions, is grossly insufficient, and the limb fails to move at all. Later on, perhaps under the stimulating suggestion that there is a manifest gain in strength and that the muscles are improving, the limb begins to be moved slightly. At times it is advisable, while the patient is making an effort, to say that the limb is actually stirring a little or that the fingers or toes are being slightly moved. At times the recovery of movement is quite sudden and complete after a skilfully made suggestion. The slowly interrupted faradaic current or other form of electric application may aid in convincing the patient that there is really nothing

of consequence the matter with the muscles themselves. In this connection it is well to recall the fact that the response of a muscle to electric stimulation is sometimes diminished as compared with the corresponding muscles of the opposite limb; and, indeed, cases of long standing are not wanting in which such differences are quite marked. In the average case, however, the muscles respond promptly, and this in itself acts as a powerful suggestion upon the patient. The benefit of massage and of passive movements need not be pointed out here. It is rarely necessary, or indeed justifiable, in order to reinforce a suggestion, to threaten the patient with operative interference or with unusual or cruel procedures. Indeed, such methods often confirm the patient in her belief that the paralysis from which she suffers is very serious or heroic measures would not be thought of.

Contractures occasionally present considerable difficulty. They are to be combated by massage, by passive movements, and by the continuous galvanic current—of course with suggestion.

The **visceral symptoms** of hysteria are now and then extremely obstinate, becoming veritable obstacles to recovery. Of these, loss of appetite, nausea, and vomiting—**anorexia nervosa**—are the most serious. The patient may manifest an extreme repugnance to food; often she can be prevailed upon to take it only in exceedingly small quantities, or she limits herself to some special article of diet, which she takes very sparingly. Should the symptom persist for any length of time, marked diminution of weight may result; but while such loss of flesh may be great, it is rarely sufficient to threaten life. The difficulty is increased by the fact that not only food, but medicines, increase the nausea, or are followed by retching, eructations, the evolution of great quantities of gas, and distention of the stomach; it is frequently necessary to administer them by stealth. Curiously enough, morphin in small quantities is, as a rule, well borne under these circumstances; it can be given with a few drops of brandy or a few teaspoonfuls of iced champagne. Better than any other remedy at our command, it relieves the nervous tension from which the patient is suffering. It should be given in doses of one thirty-second of a grain (two milligrams), repeated at intervals of from one

to two hours. Gradually the nervousness and anxiety of the patient are allayed, and the retching and vomiting are brought under control. Small quantities of food—peptonized milk, predigested beef, or some similar preparation—can now be given. Little by little the patient's confidence in her ability to take food becomes restored, and day by day the quantity of the latter can gradually be increased. At first, however, we should be content with exceedingly small quantities; a teaspoonful or a tablespoonful of some liquid food every hour or two being sufficient. A start having been made, the amount can be increased, little by little, until after a few weeks very full feeding is reached. The approach to solid food should, of course, be cautious. Electric applications may be made to the epigastrium; and in suitable cases this measure acts powerfully by suggestion. Either the rapidly interrupted faradaic current or a mild galvanic current should be used, the strength in either case not being sufficient to produce muscular contraction; for the latter would suggest and favor emesis. The current should be merely strong enough, and the duration of the application merely long enough, to produce decided redness of the skin. The patient believes that some special and beneficial procedure is being practised and often becomes mentally entirely satisfied.

Occasionally, the expedient of giving minute doses of morphin fails or proves impracticable. In such case opium suppositories, of sufficient strength to make an impression,—*e. g.*, one grain of the aqueous extract,—should be employed. Usually in about twenty to thirty minutes the stomach has become tolerant. Advantage should now be taken of this fact to administer—not food—but a dose of twenty to thirty grains of ammonium bromid. It is of advantage to associate with the bromid, fifteen or twenty drops of aromatic spirit of ammonia, and to employ as a vehicle some aromatic water, as peppermint or spearmint. Further, the dose should be given iced and well diluted. The bromid serves the double purpose of preventing the after-nausea of the opium and of decidedly diminishing the nervous and gastric hyperexcitability. Later, small quantities of food can be given.

It is rarely necessary to resort to **rectal feeding** in anorexia nervosa. If tried, it should be persisted in for a short time only, as

its moral effect is bad, the patient being confirmed in her opinion that there is something serious the matter with her stomach. In cases in which the trouble appears to be due to difficulty in swallowing or to esophagismus, it may be wise to give one or two feedings by the stomach-tube (see under *Forcible Feeding*, page 167). As a rule, it is not necessary to resort to this expedient more than once; the mere preparation for the procedure is frequently sufficient to stimulate the patient to take food naturally.

Hypodermic medication should be avoided save in exceptional instances. Relief is given very promptly, but this relief is temporary only, and the patient soon insists upon a repetition of the dose. Finally, it is unnecessary to point out that drugs should be used as emergency measures only.

In the average case of anorexia nervosa, the difficulty of administering food is not, however, so profound as is implied in the foregoing paragraphs. Most frequently the patient objects strenuously to some special article or articles of diet; strangely enough—or perhaps not strangely—they are frequently the very articles that the physician most desires to give. This difficulty may be met in a number of ways. When possible, the endeavor should be made to bring about in the patient an autosuggestion favoring the dietary it is desirable to prescribe. This must, of course, be accomplished by indirect means. Thus, the article of food, most often milk, is emphatically forbidden in the presence of the nurse, or the matter of the milk is treated as of no consequence or its mention ignored by a shrug of the shoulders. Not infrequently the patient, finding that milk is not being forced upon her, or not even being mentioned in her presence, will ask the physician whether he never prescribes milk, and whether a trial in her case might not prove beneficial. Especially is this likely to come to pass if the amount of other food has been so limited as to be grossly insufficient. The advantage gained is exceedingly great, and if followed up in the proper manner, will prove of enormous utility in the final determination of a successful issue. Very much must, of course, be left to the tact of the physician and his comprehension of the mental make-up of the patient. It is also to be remembered in this connection that the stomach disturbances of hysteria are probably not entirely mental. Occasionally we

find a deep epigastric tenderness which, from the absence of other signs, suggests that the mucous membrane of the stomach is itself the seat of an area of painful hyperesthesia—a true sensory stigma. If such be the case, we can readily imagine how the symptom will be misinterpreted by the patient. Very small doses of cocain are sometimes of benefit in such cases. Many years ago I demonstrated that the painful areas of hysteria, especially the painful spots over the vertebræ, disappear for a time after a local hypodermic injection of cocain. It is not in place to speculate as to the action of the drug under these circumstances or as to the nature of the local pathologic process, but the inference from the fact is obvious.

In **intestinal distress** and **hysterical distention,** general or limited (**phantom tumors**), the methods already detailed—massage and the suggestive use of electricity—are of value. We have already alluded to the local areas of painful hyperesthesia at times met with in the rectum, and have incidentally pointed out how such areas may be dispersed by rectal massage (see page 69). **Vaginismus,** a condition similar in character, is often very difficult to treat. For obvious reasons, massage cannot here be employed, while such measures as injections, the use of vaginal electrodes,—the anode with very mild galvanic current,—tampons, and glass plugs, etc., are of little use. The symptom does, however, yield when the hysteria as a whole is relieved, and every energy should be directed to the general measures coupled with properly made suggestion.

Retention of urine is not, as a rule, a serious complication. The physician can rest assured that rupture of the bladder will never take place in hysterical retention; nor is even disastrous distention likely to result. The placing of the patient upon the vessel at regular but not too frequent intervals, with the suggestive sound of running water and the withdrawal of the nurse from the room at the time, are among the expedients to be employed. Occasionally when the distention of the bladder becomes exceedingly uncomfortable to the patient, she may suddenly leave the bed and evacuate the bladder upon the floor. Patients will rarely go to the extent of wetting the bed. The catheter is to be used only as a last resort, and then not regularly. The physician should, of course, be cautioned against the possibility of mistaking a case of organic retention

for one of hysterical retention, and if there be any doubt regarding this point, the catheter should be used promptly. A physical examination will, it need hardly be said, at any time reveal whether the distention of the bladder has reached a serious point. The fact that hysteria so often complicates actual organic disease should make the physician especially careful regarding this matter.

Polyuria can usually be ignored. **Anuria,** on the other hand, is sometimes alarming because of its degree and persistence; and yet when it has been seemingly absolute for long periods of time, the suspicion is justified that the anuria is not real but spurious, the patient passing urine at times when she is not under immediate observation. Anuria is, of course, to be treated by the ingestion of large quantities of liquid and the giving of simple diuretics. It is, as has already been stated, not accompanied by the alarming symptoms that attend true anuria. In an hysterical patient, an exceedingly small quantity of urine may be secreted, and yet it may be very concentrated and contain a large percentage of waste products.

Insomnia is rarely a marked symptom of hysteria. When present, it often yields with surprising ease to the administration of placebos. A capsule of amylum is my favorite prescription for such cases, and I have found it wonderfully efficacious.

The **emotional instability,** the **introspection,** and the **autosuggestion,** that are such prominent features of practically all cases, are to be met by the general methods already detailed. The attitude to be adopted by the physician must depend in large degree upon the mental make-up of the patient. The whole gamut of human motives—pride, ambition, self-love, filial, parental, or conjugal affection, the sense of right and wrong—may, as occasion requires, be played upon to aid the patient's recovery.

The **hysterical paroxysm** is, as a rule, entirely averted by the general rest measures. In a patient who has had frequent seizures, the latter will usually cease to recur so soon as treatment by rest in bed and isolation has been instituted. In cases in which a recurrence takes place, notwithstanding, or in which its development seems probable, the bromids may be used as a measure of exigency, but their administration is rarely necessary over a long period. It is hardly in place to discuss the management of the hysterical paroxysm

itself. If it be mild, it should be treated as of little consequence. Quite often it can be aborted by a prompt command on the part of the nurse, by a dash of cold water in the face, by a hypodermic injection of cold water, a placebo administered by the mouth, or by any other measure that makes a decided and vigorous impression. Other things equal, the symptoms of the attack should be minimized. The nurse should declare that it was mild, and also that the patient deserves credit for having controlled it so well! The last-mentioned expedient constitutes an entering wedge by means of which the patient is sooner or later stimulated to control the attacks. By the tactful use of a little praise, even when undeserved, the will-power and morale of the patient can frequently be enormously reinforced. It is a mistake, as a rule, to scold the patient; to say to her that she is to blame for the seizure, and that, but for her own wilfulness, it would not have occurred. Indeed, the influence of the nurse or the physician may be hopelessly destroyed by such a course. If, in spite of all the measures taken to prevent or minimize it, a severe attack should occur, the nurse should refrain from making comments which would lead the patient to infer that the symptoms observed are at all unusual. Indeed, it may be tactful for the nurse to say that she is very glad to have had the opportunity of observing the seizure; that she is now able to report the exact nature of the symptoms to the physician, and both the nurse and the physician should assure the patient that the attacks are not epileptic; that persons always get well of seizures such as the one which the patient experienced, and that it is quite certain that they will not recur, or, if so, only in a very mild and modified form. In any event, the patient should learn that the attack makes but little impression upon the nurse and upon the physician, that it evokes no sympathy and leads to no modification of the stringency of the treatment. Vigorous hydrotherapy in the intervals of the paroxysms is a useful adjuvant; it not only improves the general physical tone, but aids powerfully in the way of suggestion. The fact, too, that cold douches, sprays, and the like are not always pleasant to the patient, acts as a powerful stimulus to the latter's self-control.

Somnolence, allied **sleep disturbances,** and **cataleptoid phenomena** do not merit special discussion. We should remember that

the treatment of the special symptoms of hysteria is the treatment of the hysteria itself. Gradually, as the effects of full feeding, absolute quiet, and rest become manifest, and as the patient's general sense of well-being increases, so will the symptoms, special as well as general, subside.

When the **convalescence** has been well established, the patient should, as in the treatment of neurasthenia, gradually be gotten out of bed; and, little by little, physical exercise—Swedish movements and, later, exercises in the open air—should be instituted. The amount of time devoted to exercise should gradually be increased until it is sufficient to induce healthy normal fatigue daily. The fatigue, as in neurasthenia, should be well within physiologic limits. Because of the great predominance of the psychic factors, it is important that the patient be prevailed upon to adopt some healthy mental occupation, no matter what her position in life. Mental exercise is absolutely indispensable to mental health, and the methods already discussed in connection with the convalescent period of neurasthenia apply equally here—light household duties, a course of reading or study, stenography, secretaryship, librarian's work, employment in an office or a business in which the patient comes in contact with persons of healthy mental make-up, are among the occupations that may be suggested. Idleness is fruitful of ill health, and especially is this true in hysteria.

Home Treatment

From the foregoing consideration it is quite clear that the number of cases of hysteria which can be treated successfully at the patient's home is quite small. Such a course can be ventured upon only in mild and exceptional instances, and not then, unless the efficient, docile, and intelligent co-operation of the other members of the household can be obtained. Home treatment is more frequently useful in the hysteria of children than in the hysteria of adults. A nurse trained in the special management of such cases should be placed in charge of the patient. Occasionally, when the signs of general ill health are slight, so that massage and the various forms of special exercise with which trained nurses are familiar are

not indicated, a companion, who has been carefully instructed by the physician as to her duties, may answer the purpose. However, in the great majority of even mild cases of hysteria, a properly trained nurse is indispensable. Suitable surroundings having been provided, **partial rest** methods may be applied. As in the management of mild neurasthenia, the number of hours devoted to rest in bed should be increased. The patient should be instructed to retire early, to rise late, and to rest during the middle of the day. At the same time a **complementary exercise** should be instituted. This, as in neurasthenia, should take place in the open air, and should at first be exceedingly limited in amount; for instance, a short walk twice daily—of course, in the company of the nurse. Gradually this walk should be increased in extent and its direction varied daily. If possible, a definite object should be given to the walk, a certain place visited, some one thing accomplished. **Massage** may be instituted according to the judgment of the physician. It is not only of benefit physically, but has also a good moral effect. At the same time, the **diet** of the patient should be regulated, and here the general principles already indicated should be followed. As a rule, it will be found of advantage to diminish the amount of starchy foods and sweets, to limit the amount of the red meats consumed, and to add milk to the diet. Usually the white meats, succulent vegetables, and fruit can be used freely. Milk, it need hardly be added, should be given systematically, that is, with meals, between meals, and at bedtime; the quantity prescribed being in direct proportion to the physical needs of the patient. If she be below weight and her nutrition obviously depressed, the milk should be prescribed in gradually increasing quantities until full feeding is reached. The daily **bath,** so beneficial in the treatment of neurasthenia, should also be instituted here. It may consist of the daily sponge bathing, together with occasional bathing in the tub.

All things considered, and as already insisted upon, the **mental** or **moral management** of the patient is of greater importance than all of the other measures discussed. The time in the intervals of the treatment should, so far as possible, be filled with a healthful mental occupation that will divert the patient's thoughts from herself—sewing, reading, games, increasing exercise in the open air,

driving, riding, and, when the physical condition of the patient permits of it, even swimming. In attempting to apply partial rest methods to hysteria we should, however, remember that they are applicable to a very limited number of cases only, even when the patient is placed under highly favorable conditions. Inasmuch as hysteria is a disease that from slight beginnings sometimes develops into an affection the most grave, and attended by consequences the most serious both for the patient and the relatives, it is not only in severe cases, but also in ordinary ones, by far the best plan to institute the treatment of rest in bed. Indeed, in cases of any gravity whatever, radical rest with absolute isolation is the only plan that promises any success.

CHAPTER V

HYPOCHONDRIA

Differentiation of Hypochondria from Other Neuroses—An Important but Much Neglected Subject. Character of the Symptoms; Special Forms of Hypochondria; Residual Hypochondria. Prognosis. Treatment—Rest, Exercise, Diet, Bathing, Massage, Electricity, Suggestion; Return to Business; Hygienic Life. Special Indications in Treatment; Management of Children.

THE NATURE OF HYPOCHONDRIA

In considering the subject of neurasthenia, I took occasion to point out that so early as 1765 Robert Whyte, of Edinburgh, had clearly distinguished between neurasthenia, hysteria, and hypochondria. Since his day much has been written upon functional nervous disorders. Especially is this the case as regards neurasthenia and hysteria; volumes and monographs without number have appeared upon these subjects, more particularly in later years. On the other hand, the subject of hypochondria has received scant attention. Our knowledge of neurasthenia and hysteria is now well advanced, and it is, to say the least, remarkable that the same statement cannot be made for hypochondria; and yet hypochondria is a neurosis which, though not so common as neurasthenia or hysteria, is frequently met with by the general practitioner. It well merits detailed consideration at our hands. Physicians frequently confound it with neurasthenia and at times with melancholia. Not infrequently also, cases of hypochondria are dubbed hysteria when not a single stigma of the latter affection exists. There are, however, no difficulties whatever of diagnosis. The symptomatology of hypochondria differs in essential features from that of the affections just mentioned. Thus, the clinical picture of neurasthenia, as we have seen, is that of chronic and exaggerated fatigue, while the psychic and somatic stigmata of hysteria are so characteristic as to

permit of no error. We are not, however, to relegate all cases that do not conform to neurasthenia or hysteria to the field of hypochondria. We are carefully to exclude the various neurasthenoid states and neurasthenia symptomatica (see pp. 87 and 91). These conditions, as has been pointed out, can in their turn readily be differentiated by the symptoms they present; the neurasthenoid states are, besides, dependent upon hereditary or acquired neuropathic conditions, and neurasthenia symptomatica upon actual visceral lesions.

Clinical Picture.—Moreover, hypochondria presents a characteristic clinical picture which hardly permits of error. In order that we may form a clear conception as to its essential features, a few general considerations are necessary. There is present in the organism, in addition to the special sensations evoked by the various stimuli of the external world, a generalized sensation derived from the body. In technical literature it is known as the 'cœnæsthesis.' This generalized organic sense embraces, so to speak, a total of all of the somatic impressions. In the normal man, the various nutritive processes in the tissues and the functional changes of the various viscera do not, under normal conditions, impress themselves vividly upon the field of consciousness. Nevertheless, the sense of physical or organic well-being directly affects the psychic state of the individual—it dominates, as it were, his mental tone. So long as the sum total of the organic impressions is normal, an average degree of well-being is experienced. In this condition the mental attitude is objective. When, however, the organic sense is disturbed, so that a feeling of ill-being is produced, the mental attitude becomes subjective and the individual becomes introspective. In hypochondria this organic or somatic sense is always profoundly disturbed. This disturbance, however, is not accompanied, as in actual visceral or other physical disease, by discoverable lesions, and, should functional changes be present, these are so slight and unessential as to offer no explanation of the patient's condition. The patient experiences a sense of not being well, a sense sometimes slight, but more frequently so vivid as to dominate, for the time being, his life and actions. He usually seeks for an explanation of his condition in disease of one or more organs. Most frequently he complains of manifold symptoms, vague and distressing.

Hypochondria should not be confounded with melancholia. Melancholia we now know to be but a part of the symptom-complex of a more extensive disorder—melancholia-mania. The latter is a disease, hereditary in character, in which periods of emotional depression or exaltation extend over months of time and recur in successive waves during the lifetime of the individual. During the melancholic phase of such a wave, the picture is presented of intense psychic depression associated with ideas of sinfulness, spiritual ruin, or moral unworthiness. There is the great agony of the lost soul, the hopelessness of a wasted past, or the belief in some crime never to be atoned. In hypochondria, on the other hand, the patient's ideas relate solely to conditions of the body. It is the somatic state and somatic impressions with which he is concerned.

Like hysteria, hypochondria occupies a position midway between mental and nervous diseases. Like hysteria, from which, however, it differs radically in its symptomatology, it is a psychoneurosis. Not infrequently it is hereditary, and when an actual history of hypochondria is not present in one or more ancestors, other neuropathic factors may be noted. Hypochondria is more frequently met with among men than among women, and is more common among those who are unmarried. It makes its appearance, as a rule, before middle life, being more frequent before forty than afterward.

All causes which depress the nervous nutrition, as well as all methods of unphysiologic living, favor its evolution—sedentary occupation, excessive or insufficient food, idleness, physical indulgence, the abuse of alcohol and tobacco and other nerve-stimulants. Many cases occur among clerks, students, and professional people who lead inactive lives. It occurs not infrequently among persons who are much in contact with disease—as physicians, and, more especially, medical students. While it is common among those who lead quiet and restricted lives, it now and then is met with among individuals who live out-of-doors—as farmers, laborers, or other persons who make their living by manual work. Here the monotony of life, the daily sameness of existence, the absence of all stimulus of change, may be the active cause. Again, idleness, the want of

occupation, the absence of a definite purpose in life, are powerful factors in the production of hypochondria. The latter is common among the unoccupied wealthy and well-to-do. It is seen very frequently, also, in persons who, having led active lives up to a certain point of their existence and having accumulated means, suddenly abandon themselves to a life of ease. A professional man or a business man who has worked under pressure for many years and who suddenly abandons his calling, is in great danger of lapsing into hypochondria. The stimulus of work no longer determines his mental tone; slight disturbances of function, indigestion, constipation—the result of his lessened activity—furnish the groundwork of a nosophobia. Ere long a superstructure of imaginary ills is added, and sooner or later he becomes the victim of a confirmed hypochondria.

The underlying neuropathy of hypochondria is now and then revealed in the person of the patient. Thus, he may be delicate and neurotic in appearance. As often, however, his physical development is fine; he is large of limb and great of stature, and his appearance is in crass contradiction with the grave illness of which he complains. Again, he may be talented or may manifest ability in certain directions. It is characteristic of the hypochondriac, however, that he lacks the ability or the energy to finish work that he has begun—he lacks the momentum to carry his projects to a successful termination. Frequently such persons are in their early lives quite successful. It is only with the onset of the hypochondria that they become incapables. The neuropathic constitution is also frequently indicated by unnatural diffidence, extreme reserve, or excessive egotism. Intellectual development, it should be added, has nothing whatever to do with hypochondria, for the latter occurs alike among laborers and scholars.

childhood. The tendency to hypochondria is not infrequently noted in childhood. A child, for instance, betrays unusual fear of illness or makes an excessive ado about trivial accidents, slight wounds or bruises. Very often such a child screams, not at the moment an injury is received, but only some minutes later, after he has had time to reflect that he has been hurt. As adult life is reached, such

a person may become unduly mindful of his health; he is constantly afraid of catching cold, of acquiring serious disease of the chest, or, it may be, of the bowels. It is quite a common experience for such patients to present themselves to a physician for examination while wearing an excessive amount of clothing. Layer after layer of underclothing, chest protectors, abdominal binders, and what not, have to be removed before a physical examination can be made. As often, these patients are peculiar as regards the food they eat. Not infrequently they adopt a special dietary, to which, however, they usually adhere for a limited period of time only. Thus, a patient may adopt an exclusive vegetable diet, or, on the other hand, a diet containing a disproportionate amount of meat. Most frequently it is a special dish or class of foods which is affected or excluded. Thus, cereals, breakfast foods, and special kinds of bread are greatly favored, or fruits and vegetables are declared an absolute necessity; at another time, the same articles may be strictly tabooed. At times tea, coffee, or alcoholic stimulants are rigidly excluded, only to be resumed later. At other times, water is taken in certain ways, or in fixed quantities at definite times. Very frequently, also, the patient affects the various table-waters; first one and then another is lauded for its virtues.

Along with the excessive care and fear that the hypochondriac manifests, he complains of various **local symptoms.** Thus, he complains of pressure about the head; his head feels as though there were an iron weight pressing upon the top, or iron bands about the temples or the back of the head. He complains of pains in his limbs; the limbs ache, they burn, or they are the seat of fine, vibratory trembling or numb sensations. He complains frequently of backache and of pain beneath the shoulder-blades. He has fullness and pressure over the stomach; the abdomen is distended and flatulent. He has distressing sensations which he refers to the liver or to his kidneys. He complains of palpitation of the heart, of pulsating sensations in the epigastrium or in the abdomen, or of other vague sensations, which he does not or cannot adequately describe.

An examination fails to reveal physical signs of moment. Not

infrequently the muscles are well developed and the muscular strength is fully up to normal. There is no change in the reflexes, in the pupillary reactions, or in any of the movements executed by the patient. There is very infrequently a coated tongue and some evidences of gastro-intestinal atony and catarrh, together with constipation; these symptoms may, however, be but slightly, if at all, marked. Not infrequently slight catarrh of the head and of the throat is noted, and when a knowledge of such a catarrh is possessed by the patient, it becomes a fruitful source of hypochondriac ideas. The patient, for instance, may believe that he is developing consumption or other frightful and serious disease from which he will never recover. More frequently he founds upon slight gastric catarrh and constipation a belief of serious disease of the stomach or bowels.

Beyond the indigestion and constipation, no visceral or somatic sign can, as a rule, be detected. Now and then a coldness of the hands and feet or slight lividity of the surface or other evidence of feebleness of the peripheral circulation is noticed.

True to his fear of being ill, the hypochondriac patient constantly observes his functions. Atonic indigestion and constipation offer him abundant opportunity. He may note carefully the character of the bowel movements, observing the most minute details with regard to the forms, size, color, and other qualities of the evacuations. Less frequently, he observes the urine. Now and then, however, if it be phosphatic, it is in turn carefully studied, and becomes a fruitful source of nosophobia, the patient not infrequently believing that he has spermatorrhea.

Very often hypochondriac patients keep careful records of their symptoms. It is a common experience to have them enter the physician's office, seat themselves, and then draw forth little slips of paper on which they have noted a multiplicity of symptoms, usually subjective, always trivial and unimportant, and generally incapable of verification. In manner and bearing, the hypochondriac suggests a person gravely oppressed by illness. He frequently presents the history of having visited physician after physician in the vain attempt to obtain satisfaction as to his condition. The varying diagnoses that are formed from time to time are all carefully noted by him

and all serve to convince him that he is really a very sick man. Not infrequently he delves into medical books, increases his nosophobia, and subsequently displays a superficial knowledge of medical terms in speaking of his case. Later on he begins to make his own diagnoses, and then goes to this or that physician with his diagnosis fully prepared. Finding little satisfaction or obtaining little relief from physicians, he not infrequently begins to treat himself, and he finds in the numerous quack and patent medicines, so extensively advertised in this country, a rich field for the gratification of his nosophobia. Bottle after bottle is consumed, first of this and then of that nostrum. Pills, powders, liniments, and salves follow in their turn, and the mantle and closets of his room are not infrequently laden with empty or half-empty bottles and boxes. One of the features of marked hypochondria is that the patient is always taking medicine, of some kind or other; it may be a tonic, a laxative, or some special drug. His diagnoses vary from week to week, or often from day to day. To-day he has disease of the stomach, to-morrow disease of the liver; upon another occasion it is disease of the kidneys, or of all of these organs combined. Slight palpitation of the heart convinces him that he has fatal heart disease; a pulsating sensation in the epigastrium convinces him that he has an aneurysm.

It is noticeable that such patients frequently present an appearance of health not at all in keeping with the symptoms of which they complain. Thus, a man who believes that he has serious disease of the stomach or liver not infrequently has an excellent appetite and eats with evident comfort and enjoyment. He may show excellent judgment in the selection of his dishes and may even be an epicure in his taste. He more frequently eats too much than too little; indeed, the quantity is not infrequently excessive.

Very often we find that the hypochondriac, among other things, has **extreme views** or extreme habits as regards physical exercise. He has read, perhaps, that physical exercise is necessary to health, and he now begins to devote himself to this method of treatment. One system of exercise after another is taken up, and for a time he may exercise excessively. Long walks may be taken or fatiguing runs on the bicycle. Most frequently he is devoted to room exercises, and he buys apparatus of various kinds, which after a few weeks

of desultory use are allowed to become covered with dust. Extreme forms or odd forms of exercise, respiratory gymnastics, the special 'system' of some athlete, exhibitor, trainer or advertising 'Professor,' are affected by him. At other times he takes grossly insufficient exercise, is fearful of the slightest exertion, may lie down for many hours of the day, or, believing himself to be ill, may actually go to bed.

Often he entertains absurd views in regard to ventilation, sleeping next to open windows; or, on the other hand, admitting an insufficient amount of air into his room. Equally absurd may be his habits as to bathing. Frequently he bathes excessively. Every form of douche, spray, shower, steam, or hot-air bath is tried; or he bathes in cold or in hot water daily, insists upon his plunges, or, sad to relate, very frequently manifests an excessive fear of water and does not bathe at all. No procedure is too absurd, too inconvenient, or too unpleasant for him to adopt. Any passing fad for the time being satisfies his longing for treatment. To-day it is some new form of exercise, but to-morrow it is bowel irrigation, and he now becomes a disciple of the high enema. Later 'faith cure,' 'mental healing,' or some mystic practice, claims his fealty. (See Part III.)

It occasionally happens that a patient becomes suddenly alarmed by some new symptom or by some trivial accident. On such occasions he may present all the signs of an acute attack of **fright.** The latter may be attended by palpitation of the heart, by pallor of the face, and by coldness of the extremities. Such attacks differ radically from the attacks of fear which occur spontaneously and without special exciting cause, in neurasthenia. Furthermore, the fear is always generalized in character and never assumes the special forms seen in neurasthenia, such, for instance, as agoraphobia and claustrophobia. The fright, as a rule, does not last long, the patient being for the time reassured by those about him or by the physician whose advice he seeks. The previously existing nosophobia, it need hardly be added, is apt to be much worse afterward.

Hypochondriac patients also suffer at times from **sleep disturbances.** These do not, however, usually take the form of an insomnia. As a rule, also, it is found that their statements regarding loss of sleep are grossly exaggerated. The sleep may, however, be

broken, and may be disturbed by unpleasant dreams. As a general rule, however, the hypochondriac sleeps quite well.

Course.—The onset of hypochondria is, as I have indicated, extremely gradual and its course is essentially chronic. Occasionally its evolution is hurried by some intercurrent illness, such as an attack of acute indigestion or perhaps an acute febrile attack. As a rule, it pursues a course extending over many years. It does not, however, usually pursue an even course. Its symptoms are at times more pronounced and at times less pronounced. Indeed, they may disappear altogether for a period, a true remission setting in, which persists for months or years. Later the symptoms may recur and the patient may pass through another hypochondriacal period. In other cases, again, a permanent recovery may take place, no recurrence ever being manifested. In many cases also, the hypochondria fades with increasing years and ultimately disappears; especially is this the case with the hypochondria that has its inception in youth and early adult life. Young hypochondriacs offer a relatively favorable prognosis. This does not apply, however, to cases in which the neurosis is already evident in childhood. Here, neuropathic factors are frequently present. It need hardly be said that cases with a family history of hypochondriasis are exceedingly unfavorable. Equally is this true of cases presenting a history of insanity or other nervous degeneration in the ancestry. In the acquired form of hypochondria, the prognosis is somewhat better, provided the etiologic factors, such as the sedentary habits, abuse of nerve-stimulants, and the like, can be corrected. In cases in which hypochondria makes its appearance relatively late—*i. e.*, toward forty or between forty and fifty years of age—the prognosis is relatively unfavorable, though even here as old age is approached, it fades away. Rarely it merges into a simple senile dementia. It is a remarkable fact that throughout the course of hypochondria the general mental faculties are clear and well preserved.

In very many cases the symptoms remain, with slight fluctuations, practically stationary for years. In other cases, however, the affection is progressive. The patient gradually becomes depressed and the depression gradually increases. Little by little his nutrition begins

to suffer. He grows thin, gray, and sallow. His skin and mucous membranes are dry. He no longer sweats readily. The bowel movements are dry. Constipation becomes more marked than ever, and often there are excessive discharges of mucus. His ideas are now exclusively concerned with himself. His liver, and the condition of his bowels, are the principal topics of his conversation. The taking of pills or the use of injections constitutes the all-important business of his daily life.

Of course, the greater the duration of hypochondria, the more unfavorable is the outlook as regards recovery. Even in young persons the prognosis is unfavorable after marked hypochondria has persisted uninterruptedly for a number of years, say three or four.

Special Forms of Hypochondria

While hypochondria usually presents itself in the generalized form above described, it not infrequently assumes a special form; that is, the clinical picture is dominated by a special set of symptoms. The two special forms most commonly met with are, respectively, the gastro-intestinal form and the sexual form.

In the **gastro-intestinal form,** the patient complains of various vague and distressing sensations referred to the abdomen or to the digestive tract, and while there is usually present some atonic indigestion, perhaps also slight gastric catarrh and constipation, the statements of the patient as to his sufferings are out of all proportion to the symptoms. He observes himself most closely. A slightly coated tongue, or a fancied or unusual feature of the bowel movements, alarms him, while slight indigestion may be accompanied by great sinking sensations and sudden fright. These are the patients who adopt extreme diets or curious rules as to eating, who exhaust the catalog of laxatives, and who find great satisfaction in the use of injections, kneading the abdomen, special exercises, etc., and who, in their zeal for each newly discovered dietary, medicine, or procedure, advise it for their friends and sound its praises among their acquaintances. Such cases are frequently wrongly classed as 'nervous dyspepsia.' Mentally, these patients are, as a rule, extremely impressionable. One who was for a time under my observation,

happened to hear that an acquaintance had been operated upon for appendicitis. He became greatly frightened, at once went to bed, and sent for his physician. The fright induced a number of loose bowel movements, which further confirmed him in the belief that he too had something serious the matter with him. It was with difficulty that he was persuaded to leave his bed and to go to his business, which, however, he finally did.

The **sexual form** of hypochondria is one of the most common; so common, indeed, as not to merit a detailed description. Its victims frequently believe themselves to be impotent. Quite commonly they are young men who have never attempted the sexual act; not infrequently they are engaged to be married. As a rule, when marriage takes place, they prove to be entirely competent. Every now and then, however, this is not the case, the fear, the nervousness, and especially the belief that impotence exists, leading to failure. The sexual organs are, it is unnecessary to say, perfectly normal to physical examination. Such cases are correctly classified as cases of 'psychic' impotence. Sexual hypochondria is more common in early youth; and not infrequently the belief in sexual deficiency or impotence is based upon a previous masturbation, even when the latter has been slight and insignificant. Quite commonly the occurrence of seminal emissions forms the nucleus around which the hypochondria centers. This is equally the case whether the emissions are excessive or whether they are merely normal in their frequency.

Residual Hypochondria.—A third form of hypochondria which is quite frequently met with and not always recognized, is that which every now and then follows in the wake of some other illness. It is not uncommonly a sequel of some disease of an exhausting character, such as typhoid fever or other acute and profoundly debilitating affection. Occasionally it follows a neurasthenia which has perhaps been severe, but from which the patient has made a complete recovery; yet, notwithstanding the recovery, the patient for weeks and months afterward still believes himself to be ill. This form of hypochondria may also follow acute mental affections. It is not rare after an attack of severe delirium or after confusional

insanity. It is quite frequently met with as a sequel of middle-life melancholia.

I propose for this form of hypochondria, the term **residual hypochondria.** The patient, even after having made a recovery from some acute affection, persists for many weeks, or it may be many months, in believing himself to be ill. Upon all occasions he talks about his illness; he never tires of recounting his sufferings and his harrowing experience. Not only does he disclose his feelings to the members of his family and intimate friends, but even to entire strangers. He firmly believes that no one has ever been quite so ill as himself. So firmly is he convinced of this idea that he cannot but believe that he is still somewhat ill—that it would not take much to bring about a serious recurrence, that it would be easy to endanger his life. He declares that he is weak, that he is nervous, that he is easily upset, gives various accounts of pains or other distressing sensations in the limbs, the back, or the head. He insists time and again that he is not well, and that he must take the utmost care of himself. He acquires peculiar habits with regard to his clothing, the ventilation of his room at night, the number of covers on his bed, the character and amount of his food and of his bowel movements; he presents, on the whole, a train of symptoms very similar to those met with in ordinary hypochondria. In my experience, however, these patients complain less frequently of gastro-intestinal troubles; they are more apt to lay especial stress upon the occurrence of vague pains and distressing sensations in the head, the back, and the limbs. Indeed, their statements regarding the pains they suffer are often grossly and transparently exaggerated. Not infrequently they assert that their suffering is exquisite and excruciating, and yet the unsubstantial character of the pain is proved by the fact that it is frequently relieved by placebos. A starch capsule is frequently elevated to the rank of a powerful therapeutic agent. Similar is it with the persistent and distressing insomnia of which these persons complain. It is frequently relieved by placebos or by absurdly small doses of some hypnotic, as fifteen drops of paraldehyde. As in ordinary hypochondria, the patient is very fond of taking medicine. Indeed, he never tires of it. A simple physiologic plan of treatment does not satisfy him; he must have prescriptions.

We should carefully distinguish between the affection simple hypochondria as it is here pictured, and the **hypochondriacal stage** observed in the developmental period of **various psychoses.** Simple hypochondria is a well-defined neurosis in which the conduct, views, and opinions of the patient are dominated by an all-convincing sense of illness. **True qualitative mental changes** are, however, absent. Different is it in the developmental period met with in some of the insanities. Here the patient may pass through a hypochondriacal period, as in paranoia and melancholia; but, in addition, specific mental changes sooner or later make their appearance. Hallucinations of sight and hearing, especially the latter, are striking features. The patient tells us of voices or of apparitions, and as the disease progresses these special sense hallucinations form the foundations of delusions. At times also hallucinations exist, which are referred to the viscera. They are not interpreted, however, as indicating disease of the liver, indigestion, Bright's disease, spermatorrhea, etc., as in simple hypochondria, but in insanity they form the basis sooner or later of some grossly delusional belief, such as the presence of snakes in the stomach, loss of the viscera, absolute closure of the bowel, absence of the mouth, etc. Simple or true hypochondria is a well-defined affection and is not prodromal to any other. Its symptoms constitute a clinical whole, which frequently persists for years with little change; indeed, it may last an entire lifetime.

PHYSIOLOGIC METHODS OF TREATMENT IN HYPOCHONDRIA

An analysis of the symptoms of hypochondria throws but little light upon the pathology of the affection. However, it is a legitimate inference that the affection occurs essentially in persons of a neuropathic constitution. The neuropathy, as proved by the family history, is frequently hereditary; it may, however, be acquired. The prognosis, we need hardly point out, is much more favorable when hereditary factors are not prominent. The indications as to **treatment** are unfortunately not so clear as in the case of neurasthenia and hysteria. The physician realizes that it will not suffice to make merely the diagnosis of hypochondria and then to state to the patient

that the latter suffers from a purely imaginary disease, that he is not ill, but merely believes himself to be ill. As a matter of fact, the patient is really ill—indeed, ill from a very troublesome affection. There is some underlying cause for the disordered and exaggerated cœnesthetic impressions of the patient, and merely to deny the existence of the condition is as unscientific as it is inconclusive. The wisest course is not to dispute the reality of the condition, but to point out to the patient clearly the functional character of the symptoms and the entire absence of organic disease. Especially is this course valuable if, previous to the expression of the opinion, the physician has made an elaborate physical examination. Hypochondriacs like to be examined, and one of their most common grievances is that nobody will listen to their symptoms, no one will take the time to examine them properly. These cases are among the most troublesome with which the physician has to deal and their successful management requires endless tact and judgment.

The problem of treatment resolves itself, first, into the application of **physiologic measures**; and, secondly, the correction of **special symptoms.**

Rest and Exercise

At the outset we are confronted by the question of **rest.** Shall a hypochondriac patient be rested? and if so, how much and for how long a period? Rest, especially absolute rest, is not without its dangers (see page 53). Particularly is this true in hypochondria, and as a general rule treatment by systematic rest in bed should not be employed in this disease. Exception, however, should be made in cases in which there is a marked impairment of the general health, decided lowering of nervous and muscular tone, or special symptoms so marked as to justify placing the patient in bed. In the majority of cases rest, if employed at all, should be **partial** only. The obvious aim of our treatment should be to raise the activity of the various functions of the patient to so high a level that there will be substituted for the general feeling of ill-being from which he suffers, a sense of well-being. It is essentially a problem of physiologic living and physiologic therapeutics that confronts us.

We should first carefully regulate the patient's **manner of living.**

We should insist upon an increase of the number of hours devoted to **rest,** but at the same time we should institute a systematic form of **exercise.** We should more than ever bear in mind the physiologic truism that the preservation of a function depends upon its exercise, and as the patient's general health improves, the time devoted to exercise must be increased; we must exact from the patient, also, the meeting of every business or professional obligation. Cases of hypochondria do best when they are under the full pressure of work. Work, mental and physical, means the active stimulation of function, and this means a relatively higher level of health. Work, further, necessitates an **objective mental attitude,** and in favorable cases, the patient devotes less and less time to the consideration of his symptoms. It is not necessary here to say that, in addition to rest and work, we should apply the other physiologic measures at our command as they seem indicated. Especially valuable is **hydrotherapy,** whether applied by simple or elaborate methods. The stimulating and beneficial effects of bathing in its various forms, in hypochondria, are sufficiently obvious, nor need we dwell here upon the value of **massage** as a method of stimulating nutrition. Massage is especially indicated if the patient be unduly fatigued by exercise, or if fatigue-pains and aches are present. **Electricity** also is of value, active general faradization or active treatment with the static machine being most effective. Indeed, the use of electricity, and especially of static electricity, is now and then followed by most satisfactory results. Sometimes the improvement is very rapid and even brilliant, static electricity acting powerfully by suggestion.

Not infrequently we meet with cases of hypochondria which have been of such long duration and are so profound that nothing can be accomplished by partial rest methods. It is usually impossible to bring such patients under the beneficial discipline of a prescribed method of living, and under these circumstances, it is an excellent plan to place the patient for a short period on **absolute rest in bed;** for the physician is then for the time being master of the situation. A well-instructed nurse, of the same sex at the patient, is an indispensable aid. Elaborate physiologic methods should then be instituted, not only for the beneficial effects of the discipline and routine

involved, but also for the therapeutic effects of the measures themselves. They should invariably, of course, be administered along with the suggestion of returning health. By their means—especially by massage and bathing—indigestion, constipation, and sleep disturbances can be decidedly alleviated or entirely corrected. The plan to be adopted is, in general, that which has been detailed in the application of rest to neurasthenia. It must especially be borne in mind, however, that the patient should not be allowed to have much leisure time for thinking, but that the various physiologic methods employed should be so adjusted as to fill in the day as much as possible. As in the treatment of neurasthenia, **massage** should be begun gently and should not at first be given for too prolonged a period. The **bath** should, as in the treatment of neurasthenia, be limited at first to a warm sponge bath between blankets. Later on, cold sponging, alternate hot and cold douching, or the drip sheet-bath vigorously applied should be substituted. **Electricity** also should at first be confined in its application to the slowly interrupted faradaic current applied to the muscles of the limbs and the extensor muscles of the back a number of times to produce a sufficient number of contractions. Later, the application of electricity may be made more vigorous, general faradization may be employed, and further on, during the out-of-bed period, static electricity can be substituted. As a rule, the patient begins to improve. Indeed, he is apt to show improvement early in the treatment, but we must not expect the improvement to be so great as in the case of neurasthenia or hysteria. The novelty of the treatment, which makes so favorable an impression at first, soon wears off, and it is therefore a good plan not to pursue the expedient of rest in bed for too long a time. Just as soon as a profound physical and mental impression has been made, and while the novelty of the various measures employed is still in full force, the patient should be gotten **out of bed** and **active exercise** instituted; the latter should be very slight at first, but should be steadily increased in vigor until a maximum amount is attained. In many cases, the approach to exercise must be extremely gradual. Many patients submit willingly to massage, but object seriously to any attempt at active or even extended passive movements. It not infrequently occurs that the

massage must be associated with passive movements that are at first extremely slight in extent, and little by little these movements are to be made more and more free until every joint in the body is moved several times in all of its physiologic directions and to its fullest extent. Little by little movements with resistance are added, until finally a full system of active movements is instituted. Gradually other forms of exercise are employed until, as already stated, a maximum amount is reached. What this maximum shall be, must depend largely upon the judgment of the physician. Care should be exercised that pain is at no time given in making passive movements, and especially that the patient be not exhausted or that the cardiac action be not disturbed during movements of resistance or the other active exercises. I know of no matter concerning which greater tact is required than in the gradual introduction of the patient to active exercise, especially if the victim of the hypochondria be a woman. The time spent in bed should, of course, be gradually decreased as exercise is instituted until the patient is out of bed for the entire day.

It is necessary to repeat emphatically the **caution** that the **period** of absolute rest in bed should be short; say, three to six weeks. After this interval, the plan of treatment should gradually be converted into one of **partial rest,** exercise being instituted at a relatively early period. Full rest methods unduly prolonged are sometimes dangerous in hypochondria; indeed, if practised unwisely, they may be followed by disastrous results. The patient learns to love the coddling care of the rest treatment and insists upon its prolongation, declines to get out of bed, and resists tenaciously against exercise or activity in any form. Care also should be taken that the treatment, and especially the institution of the various physiologic methods, should not serve to confirm in the patient's mind the belief that he is seriously ill. As in hysteria, the unfailing **suggestion** should be made to the patient both by the physician and nurse, directly and indirectly, first, that he is not seriously ill, and, secondly, that he will inevitably get entirely well. Further, the patient should never be accused of being hypochondriacal. As a rule, he does not ask for a specific diagnosis, and he is readily satisfied when he is told that he is suffering from one of the forms of 'nervous prostration.'

It is of great importance in hypochondria not to allow too long an interval to elapse between the rest treatment and the **patient's return to his business.** Such persons, if sent away to the seashore, to the mountains, or to other health-resorts, even in the company of a nurse, are apt to relapse, and much ground that has been gained may thus be lost. It is important that the return to work be early and that a new method of living—the discipline of new habits—be rigidly maintained. The resumption of work should take place while the patient is still under the immediate supervision of the physician. I know of no affection in which it is so necessary to keep in active touch with the patient as in hypochondria. Every hour of the day must be filled with work, with the active interests of the patient's business, with exercise, or with various prescribed duties. The aim is, of course, to give the patient's mind as objective an attitude as possible, and to leave him little time to dwell upon his symptoms. As a rule, the patient will bear various forms of hard exercise after a rest treatment, and among these horseback-riding is one of the most beneficial. In this connection we are aided by the fact that sooner or later, if the approach be made sufficiently gradual, exercise strongly appeals to the average hypochondriac; after a time he becomes 'enthused.' First one method of exercise and then another is tried, and every effort should be made to interest him in an active out-of-door life. In unfavorable seasons of the year, exercise in the room or gymnasium must substitute exercise in the open air. The latter, of course, is always to be preferred when practicable.

In many cases of hypochondria, the relief to symptoms brought about by the application of physiologic methods is so great as to constitute to all intents and purposes a complete recovery. The highest possible functional activity means for these persons the highest possible degree of health, and it is this highest possible functional activity which we must seek to establish after a course of rest treatment.

Special indications in the treatment of hypochondria must be dealt with as they arise. Especially is it important to give our attention to the **digestive tract,** so frequently disordered in hypochondria. Atony, catarrh, and constipation should be treated, as

in the case of neurasthenia, by a suitable diet and appropriate medication. The principles already laid down (see page 57) should be followed. We should diminish the amount of the red meats and of the starchy foods, and, other things equal, should add milk to the diet. The rôle played by a possible gouty diathesis should be borne in mind. Again, the tendency to constipation and the great amount of thought which the hypochondriac gives to the condition of his bowels suggests the necessity of adopting methods for producing easy, and as far as possible normal, evacuations. The hypochondriac is always in better spirits when the bowels are freely moved. In the average case two movements a day are better than one.

In the **sexual form** of hypochondria, a general plan of treatment is, of course, to be instituted. The patient is also to be told that the occurrence of seminal emissions does not justify a belief in sexual weakness or impotence—that seminal emissions are normal phenomena. Should the latter actually occur with undue frequency, measures should of course be instituted to control them. Liquids late at night should be avoided lest the bladder be overdistended during sleep; the bowels should be kept freely open; sleeping upon the back should be prevented; and, if necessary, an alkaline bromid or minute doses of hyoscin hydrobromate should be given at night. Especial weight is, however, to be placed upon physiologic methods, especially upon the various forms of bathing, exercise, and diet.

In **children** in whom a tendency to hypochondria is noted, every effort should be made to minimize affections from which they suffer or accidents through which they pass. Little attention should be paid to transient illness or slight cuts and bruises; above all, should sympathy be withheld; nothing should be said or done to create the impression in the child's mind that he has been seriously ill or hurt. The neglect of this precaution often leads in a suitable soil to a confirmed hypochondria in later life. It is important to see that children of hypochondriacal tendencies are not put under too severe a pressure at school; they should lead hygienic lives—especially as regards food, exercise, and work. Everything should be done also to harden such children by judicious exposure. We should remember, also, that it is bad for children of hypochondriacal tendencies to live with invalids or be much in their company.

CHAPTER VI

THE APPLICATION OF REST IN CHOREA AND OTHER FUNCTIONAL NERVOUS DISEASES; AND IN ORGANIC NERVOUS DISEASES

Chorea; Epilepsy; Spasm; Paralysis Agitans; Headache—Migraine; Neuralgia; Painful Spine—Coccygodynia. Neuritis—Multiple Neuritis; Sciatica; Local Palsies. Diseases of the Spinal Cord. Diseases of the Brain.

CHOREA

Rest methods are applicable not only to the great neuroses, neurasthenia, hysteria, and hypochondria, but also to various other functional nervous diseases. Especially are they applicable to chorea. Indeed, the chorea of childhood frequently yields to simple or **partial rest** methods alone. The indications are those of increased rest, full feeding, and sponge bathing. Massage and electricity are not usually applicable—at least not until convalescence has been fully established. In the average case of Sydenham's chorea it is, of course, not necessary to place the patient continuously in bed. The child should, however, be withdrawn from school, should go to bed early in the evening, and be allowed to rise late in the morning. Exercise for variable periods in the open air should be insisted upon, as well as rest in the middle of the day.

Every now and then in **severe** cases, it is necessary to adopt **full rest** measures; indeed, when the movements are very severe, the patient is necessarily in bed, and in such cases elaborate rest methods and full feeding should be instituted. It need hardly be pointed out that in many cases it is necessary to have the headboard, footboard, and sides of the bed covered in such a way that the patient cannot in the violence of his movements inflict any injury upon himself. Various remedies must, of course, be used in conjunction with rest in these severe cases, and I would mention especially the

bromids, chloral, and trional. Trional particularly is of value. It should be given in small doses, two to five grains, according to the age of the patient, at intervals of four hours. The employment of arsenic, iron, and other tonics need not here be dwelt upon. Rest measures, it need hardly be added, should in severe cases be continued long after convalescence has been established.

EPILEPSY

Occasionally rest with general physiologic measures is applicable in epilepsy. In cases made worse for the time being by unphysiologic living or by overstrain, we are able to lessen the frequency of the seizures and to diminish the amount of medicine required. Exercise, and especially **open-air work,** must, of course, constitute a prominent feature in any plan of treatment that is instituted. The rest should rarely be more than partial. Full rest measures are only exceptionally applicable. Their value is in direct proportion to the signs of general ill health and of loss of strength and weight that may be present. In a few instances in which such signs were very evident I have seen a truly remarkable improvement ensue upon a rest treatment followed by rigid physiologic living.

SPASM

Rest methods are also occasionally of value in **functional spasms** and **functional tremor,** though permanent results are never achieved. Every now and then in a case of spasmodic **torticollis,** in which the movements are excessive in their severity, benefit can be obtained by placing the patient in bed upon full rest methods, and especially will this be the case if some motor depressor, such as conium or gelsemium, be administered coincidently. Gelsemium particularly is of value. In large doses it is, of course, a poison and its use should always be attended with care. It may be given in the form of the fluid extract, beginning with five drops and with intervals of several hours. Four hours is a convenient interval, as the effect of a single dose lasts from three to four hours. Gradually the dose should be increased to ten, fifteen, or even twenty drops. Twenty drops,

indeed, should be considered the maximum dose, and should not under ordinary circumstances be exceeded. During its administration, the patient should be watched, and if ocular symptoms, such as double vision, make their appearance, the drug should for a time be discontinued. During the use of this agent the spasm diminishes to a very great extent, and in some cases almost ceases, though I believe it has never been known to do so entirely. However, so pronounced is the amelioration that it affords, especially if its administration be attended by the employment of full rest measures, that the patient is very materially benefited.

PARALYSIS AGITANS

In discussing the application of rest in functional nervous diseases, it is important especially to point out that in at least one of these affections **rest methods are never applicable;** namely, paralysis agitans. Cases of paralysis agitans are not only not benefited, but are sometimes made worse, by full rest treatment. Rest favors the tendency to fixation and rigidity, a tendency which is sooner or later a prominent feature of the disease. Systematic **exercise** is indicated in paralysis agitans. From the very nature of the disease, the patient usually tends to remain quiet, and it is exercise, gentle in character, to which he must be urged. The exercise may be passive or active. The movements should be modeled after those devised by Fraenkel for the treatment of locomotor ataxia. (See volume VII.) Indeed, the patient feels much more comfortable when he is in motion. Even such purely passive motion as is obtained by riding in a carriage or in a railway train gives relative comfort. No attempt should be made to treat the tremor. Certain drugs, such as conium and hyoscyamus, will lessen it, but their use is dangerous and most objectionable.

It should be added that **massage** is, as a rule, badly borne by patients with paralysis agitans. This is true likewise of **electricity. Bathing** is also best limited to relatively simple procedures. Simple hygienic measures, in which **partial rest** plays a minor rôle, together with general tonic medication, is the plan of treatment which should be followed in this disease.

HEADACHE

Many forms of headache are relieved by systematic rest in bed, and it becomes of importance to select cases suited to this mode of treatment. Everything necessarily depends upon the cause of the pain. Rest methods are of course most successful in those cases in which the headache is merely part of the symptom-group of a neurasthenia. However, even when the headache is due to some local cause, such as **eye-strain,** rest methods are often of inestimable value. Time and again we find that after the eyes have been corrected by proper glassing, the headache persists. Frequently relief is only obtained by giving the nervous system as a whole a more or less prolonged rest. This is true also of the headaches that result from **visceral disturbances,** as of the stomach. Frequently the latter depend upon a simple atony and can best be treated by rest in bed. In cases in which the headache appears to be due to a **diathetic cause,** such as gout, or what is vaguely called rheumatism, we must combine with the rest a suitable dietetic treatment and the thorough administration of salicylates and allied remedies. The advantages of hydrotherapy need not here be pointed out, as they have been sufficiently dwelt upon in discussing the treatment of neurasthenia.

Migraine

Other forms of headache, such as migraine, can also be greatly benefited by rest methods. In obstinate and persistent migraine, rest methods constitute the only means of bringing about decided improvement in the patient. The rest should be absolute, and the details should be carried out as elaborately as possible. It is not necessary here to point out the great importance of the dietetic treatment, especially the exclusion of red meats and of starchy foods and sugars, nor to dwell upon the great value of milk. Free use also should be made of bathing. Everything should be done to stimulate the elimination of uric acid and its salts and the group of allied toxins. Liquids should be administered freely. At various times the salicylates, piperazin, or lycetol should be given in a thorough manner. In other words, the treatment should consist in rest, combined with judiciously applied diathetic measures. As a rule,

it will be found that the intervals between the paroxysms of headache gradually increase, and also that the attacks themselves become much less severe. If the treatment be carefully carried out, the improvement is usually very great, so much so as in many instances to amount to a practical cure. The patient also gains in weight and strength, while the general nutrition is greatly improved.

NEURALGIA

It is not necessary here to enter into the details of the treatment required by individual cases, save to point out the great value of massive doses of strychnin in **trigeminal neuralgia.** The initial dose should be one-thirtieth of a grain (2 milligrams) at intervals of four hours. In the course of twenty-four to forty-eight hours, the interval should be lessened to three hours. After another twenty-four or forty-eight hours, the dose should be increased to one-twentieth of a grain, and later on, if the pain has not been relieved, the interval may be shortened to two and a half hours. In the large majority of cases, the drug is well borne, and the toxic action of strychnin, as evidenced by sensations of stiffness about the jaws or back of the neck, is absent. It is of the utmost importance that as far as possible rest be carried out during the period of medication.

The importance of **dietetic measures** in other forms of neuralgia, and especially of the value of the salicylates and allied remedies in cases in which a **gouty** or an **alloxuric diathesis** is present, is quite evident. Finally, in cases of brachialgia, sciatica, or other local forms of the disorder, **rest methods** should as far as possible form an integral part of the treatment.

The importance of rest in neuralgia need not here be pointed out. Patients usually discover for themselves the fact that rest and quiet diminish their suffering. If the nerves affected be situated in the upper limb, as in **brachial neuralgia,** absolute rest should be secured by placing the arm in a **splint,** as in the treatment of a neuritis (see page 149); if the neuralgia exist in a leg, as in sciatica, absolute rest in bed should be insisted upon (see page 153). As a rule, even in chronic cases, either complete recovery or marked improvement follows these simple expedients.

PAINFUL SPINE; COCCYGODYNIA

Painful spine is usually a part of the symptom-group of neurasthenia. No matter in what portion of the spine the pain may be situated, it is made much worse by fatigue, mental or physical. As may be inferred, it is usually diminished by rest. The proper treatment is a more or less thorough course of **rest cure** combined especially with **hydrotherapy.** Absolute rest, with hot and cold douching, gentle or vigorous according to circumstances, yields the best results. Electricity also is of value in many cases, more especially the constant galvanic current. The condition is sometimes exceedingly persistent, and success depends largely upon the detailed methods pursued. As a rule, a patient with painful spine presents numerous neurasthenic symptoms, with or without a complicating hysteria, and it is the neurasthenia to which treatment should primarily be directed, rather than to the local condition. In all severe cases little can be expected from any course of treatment other than absolute rest for a prolonged period. The methods which have already been detailed (see pages 48 and 49) should be followed. Massage should be resorted to as in ordinary rest treatment, the masseur having been instructed, however, to avoid in the beginning the painful areas. Later, however, the latter should be included in the rubbing, at first gently and later more and more vigorously. Associated with spontaneous pain in the spine, there is usually hyperesthesia of the overlying tissues, and the pain produced by pressure or contact of any kind may be exquisite. However, as the general condition of the patient improves, massage can be applied freely. A few writers recommend **counterirritation** by the actual cautery in the more severe cases. However, if a thorough and radical system of rest treatment be carried out, such measures are wholly unnecessary. Internally, tonics, cod-liver oil, and other nutrients may be administered. If a gouty or a rheumatic diathesis be suspected, a course of the salicylates or of piperazin or lycetol should be instituted.

When the pain is situated in the coccyx, we should not lose sight of the fact that actual disease of the bone may be present. Such cases occasionally necessitate surgical interference.

REST IN ORGANIC NERVOUS DISEASES

Rest in the treatment of organic nervous diseases assumes a special and peculiar importance. It is necessary that we consider rest, first, in relation to diseases of the **nerves**; secondly, in relation to diseases of the **spinal cord**; and, thirdly, in relation to diseases of the **brain.**

NEURITIS

The first indication of treatment in neuritis, no matter what the cause of the inflammation, is **rest.** If the affected nerve be situated in a limb, this can be accomplished by the use of a well-padded **splint,** the limb being fixed in such a position as to place the nerve, together with the muscles and other contiguous structures, in a state of relaxation. The position of moderate flexion is usually the one in which this result can best be attained. A fixed position is to be maintained and tension is to be relieved as far as possible. It is remarkable how rapidly relief of pain follows the institution of this simple expedient, and in the average case the recovery, unless there be special causes at work, dates from the application of the rest.

Other measures should, of course, also be employed. It is of advantage, for instance, in most cases, especially if the neuritis be **acute,** to make local applications of **heat.** The heat can be either dry or moist. If the nerve be superficial,—as, for example, the ulnar at the elbow,—moist heat can be applied with benefit. In the majority of cases, however, dry heat will answer our purpose best, as it interferes less with the dressing. The temperature of the application must be regulated by the effect produced; in some cases a moderate degree of warmth, in others a relatively high temperature, gives the best results. Occasionally, though rarely, applications of **cold** assist in the relief of pain. Counterirritation by blisters or sinapisms, especially if the neuritis be acute and the result of trauma or other physical cause, does more harm than good, and should, except in special cases, be avoided. If there be a febrile reaction, as is sometimes the case, it may be advisable to make use of general measures, such as rest in bed, free sweating, and purgation.

When the acute stage has passed away, a **subacute** condition

remains which is in part the result of the damage done the nerve by the trauma, and is in part due to the incomplete subsidence of the inflammation. **Rest** is to be continued, and if pain and tenderness persist unduly, **counterirritation** may now be of service; blisters may be used or the actual cautery be applied. Counterirritation is applicable, however, only to certain nerves, *e. g.*, the sciatic. In special regions, such as the axilla, counterirritation is best avoided altogether. In inflammation of the brachial plexus or of the nerves of the arm, gentle inunctions with ichthyol ointment, one part to four, may be employed. Occasionally good results follow the application along the course of the inflamed nerve of an ointment consisting of equal parts of belladonna ointment and mercurial ointment. It is exceedingly probable that some of the benefit derived from these ointments is the result, not so much of the specific action of the drugs which they contain, as of the **local massage** which their proper application necessitates. After a stage has been reached in which pain has largely or entirely subsided, massage is of the utmost utility. Its employment is indicated at a period when all inflammation has subsided and only the sequels of the latter persist. It should be applied daily in such a manner as to exert an effect upon both nerves and muscles.

The **galvanic current** is occasionally of use in diminishing the pain of neuritis in the chronic stage. The constant current should be employed, the anode being applied over the painful portion of the nerve-trunk and the kathode at some indifferent point. The application should be continued for several minutes—from five to fifteen, according to circumstances. A very weak current should be used at first, its strength being increased little by little. If the tenderness of the nerve-trunk has altogether disappeared, faradaic electricity or the interrupted galvanic current is indicated. Both are useful not only as affording information of the quantity and quality of the changes that the nerve and the muscles supplied by it have undergone, but also as a direct means of stimulating the nutrition of these structures. Regarding the choice of the current, the rule should be followed, other things equal, that that current be employed which excites the greatest degree of response in the muscles with the least pain or distress to the patient. If the neu-

ritis has been marked, reaction of degeneration is usually present, and this may in severe cases advance to such a degree that the muscles fail to respond at all. Electricity is then for the time being useless, and our main reliance should be placed upon massage. (See also volume II and volume VII.)

If it appear from the history that the neuritis is the outcome of a localized rheumatism or gout, appropriate remedies should be given internally. More than to allude to the salicylates, the various alkalies, lycetol, piperazin, or colchicum, is hardly necessary here. As a rule, the salicylates should be used either in the form of some salt of salicylic acid, or salophen or aspirin, in the early part of the treatment. The dose should be relatively large and should be continued for a number of days—a week or more. Later on, piperazin or lycetol should be administered. If the trouble persists unduly, small doses of some alterative, such as potassium iodid or corrosive sublimate, may be given. The administration of the iodid or mercury can be continued for a relatively long period, but the doses should, of course, be small.

It is of the utmost importance that local rest should not be maintained too long. So soon as the acute symptoms have subsided and pain is under good control, the splint should be removed and passive movements should be instituted along with massage. It is not necessary to speak of the harm done by keeping a limb upon a splint too long—of the fixation of the joints, the atrophy of the muscles, and the general impairment of nutrition of the limb. We should bear in mind that there is no greater stimulus to the nutrition of a limb than the exercise of its function, and just so soon as it is practicable, the patient should be instructed to use the limb. After a neuritis, patients are apt to nurse the limb—for instance, an arm—for too long a period. They should be encouraged to use it gently at first and to exercise it vigorously later on.

Multiple Neuritis

In all forms of multiple neuritis, whatever the origin, absolute rest in bed is imperative. In most cases, indeed, the loss of power in the limbs is so pronounced that the patient is already in bed when the physician arrives. This is especially true of the toxic cases,

notably those due to alcohol. In other cases, as those that follow infectious fevers, the patient, not knowing the seriousness of his condition, may remain up and around unless advised to the contrary. Absolute rest in bed, let us repeat, is imperative. The limbs should be so placed as to be neither excessively flexed nor unduly extended, and should be supported upon soft pillows, or, better still, if they be very painful, upon cotton batting kept in position by flannel bandages. In other cases flannel bandages alone, if not too firmly applied, give considerable comfort.

It is best, if possible, to avoid the administration of analgesics. Only when the pain is not relieved by the rest and the position of the limbs should these drugs be used. Morphin, in small doses, may be employed in severe cases. The various coal-tar products are best avoided. It is not necessary to say that the etiology of a given case will necessarily influence the treatment. If alcohol be the cause, its withdrawal must constitute the first step in the treatment. If, on the other hand, a diathetic factor, such as rheumatism, be established, anti-rheumatic medication must be instituted. Salicylic acid and its salts are, as a rule, not well borne by the stomach. Synthetic substitutes, as salophen, and especially aspirin, are much more useful. The advantages of lycetol and piperazin need not be pointed out. These remedies, however, are of little value unless associated with the rest methods. After the pain has subsided, or has been brought in a very large measure under control, massage and passive movements may gradually be instituted. Later on, the patient may also be treated by electricity. The slowly interrupted faradaic or galvanic current may be used in order gently to stimulate the muscles and nerves.

The treatment of multiple neuritis is essentially a treatment by 'rest-cure' methods, and it is remarkable how much can be accomplished by these methods in the ordinary case. Even in patients that have been bedridden and in whom contractures have appeared in the limbs, it is possible, by the systematic employment of massage, passive and active movements, and electricity, to bring about a remarkable degree of improvement and even entire recovery.

Sciatica

The treatment of sciatica may be considered under two heads: (1) the treatment of **acute** or recent sciatica; and (2) the treatment of the **chronic** or established form.

The first indication in the treatment of **acute or recent sciatica** is absolute rest. This can be attained only by putting the patient to bed. The limb should be well protected by flannel bandages and fixed upon a well-padded **splint** in a position of moderate extension. Next, the bowels should be opened freely by a saline purge, and, inasmuch as leaving the bed is impossible without disarranging the dressing, a bed-pan should be used. Usually the fixation of the limb upon a splint diminishes the pain very decidedly. Hypodermic injections of morphin are rarely needed if this expedient be adopted. When pain persists after the application of the splint, the patient, if his heart be strong, may be relieved by doses of antipyrin, from ten to twenty grains (0.65 to 1.3 gram); the other coal-tar analgesics are also of use, and permissible when the heart presents no counterindication.

As a rule, it is of decided advantage to administer freely one of the salicylates. The dose should be sufficient to evoke evidences of the physiologic action of the drug, such as fullness in the head and ringing in the ears. To accomplish this end, twenty grains (1.3 gram) of sodium salicylate in solution, largely diluted, should be administered every four hours. The unpleasant effects may to some extent be mitigated by associating with it equal doses of sodium bromid, or moderate doses—one to three grains (0.065 to 0.2 gram)—of caffein citrate. Later on, small doses of the iodids and mercurials may be substituted for the salicylate. However, it cannot be too emphatically impressed upon the mind of the reader that **rest** and not drugs must be the essential principle of the treatment of sciatica. General rest in bed should be persisted in for a time—several days or weeks—after the pain has entirely subsided.

The larger number of patients suffering with sciatica apply for treatment after the affection has become established as a **chronic** condition. In such cases the hopelessness of temporizing methods should be pointed out to the patient, and his consent to a prolonged

period of rest treatment, extending over six or eight weeks or longer, should be obtained. The first indication is, as in acute sciatica, to place the patient **absolutely at rest,** and, at the same time, to fix the limb upon a **splint** in a position of moderate extension. While the patient is in bed, the principles embodied in the general application of rest should also be followed. General massage and, as soon as the pain in the limb permits it, local massage should be employed. This is also true of electricity. At the same time a suitable diet, from which red meats, starches, and sweets are excluded, should be instituted, while full feeding should be brought about by the addition of milk in a steadily increasing quantity. The treatment should extend over a period of from six to ten weeks.

Local Palsies

Local palsies, no matter what their origin, demand, in addition to massage and electric treatment, **rest of the muscle.** This rest is of the utmost importance, and upon its proper institution depends, in a large number of cases, recovery. For instance, a **deltoid muscle** which has been paralyzed by a blow may refuse for weeks and months to improve. The arm in such a case hangs helpless at the side of the trunk. Owing to the relaxed condition of the muscle and the weight of the arm, the humerus may drop so much that it becomes possible to insert the finger between the head of the humerus and the acromion process. The muscle is not only suffering from the effect of the paralysis, but is being constantly overstretched by the weight of the arm. Under such circumstances recovery may be greatly delayed or may not ensue at all. Just so soon, however, as the weight of the arm is taken off the muscle by a bandage or sling which holds the humerus well up in its socket, the muscle is placed in a condition favorable to improvement. I have repeatedly seen persistent failure follow the neglect of this simple expedient. When the limb is properly supported, the muscle is no longer in a state of tension, but is relaxed, and now usually responds to treatment by massage and electricity. Another instance is seen in **foot-drop**; the power to flex the foot upon the leg may be very slight or altogether lost, but if the weight of the foot be taken off the muscles by a 'rubber-muscle' or other device, recovery is greatly favored.

The necessity of placing a paralyzed muscle in a position of relaxation is not sufficiently recognized. By this expedient the muscle is placed in a position of relative rest. Not only do massage and electricity prove more efficacious under these conditions, but voluntary efforts at exercising the muscle are much more likely to yield favorable results at an earlier period.

DISEASES OF THE SPINAL CORD

Rest is of great service in various diseases of the spinal cord. Much judgment is required in the selection of cases and in the degree of rest which is to be applied. Patients suffering from **acute affections** of the cord, such as acute myelitis and trauma, are of necessity in bed, and in them the very nature of the affection veils the possible benefit that may ensue from rest. In patients, however, who suffer from **chronic affections** of the cord but who are still able to walk, rest, if judiciously applied, is often followed by decided improvement. For instance, we now and then meet with patients suffering from **syphilis** of the cord who, in spite of the judicious administration of the iodids and mercurials, fail to improve. Not infrequently if, in addition to antisyphilitic treatment, such patients be placed in bed with full rest methods, improvement gradually becomes manifest, and in time complete recovery may ensue. The rest methods greatly stimulate nutrition, and perhaps also facilitate the action of the remedies. I have repeatedly observed favorable results in cases otherwise persistent and obstinate.

Rest methods are also of value in **organic diseases** of the cord, such as **chronic myelitis** and the various **system degenerations,** such as **amyotrophic lateral sclerosis, ataxic paraplegia,** and **tabes.** It is important, however, to bear in mind that in such cases the degree of rest applied should never be absolute. A word of **warning** is here indicated. Complete and continuous rest in bed often results in an alarming increase of the paraplegia or other motor disturbances present. In a case of myelitis, in which the patient is still able to walk, continuous rest in bed for even a short period may greatly impair the power to walk or even to stand, and this is equally true of absolute rest in other organic cord affections.

Full and continuous rest in bed should never be employed in cord diseases. Rest should always be combined with **exercise,** and the success attained in a given case depends entirely upon the relative proportion of these measures. While the patient is resting, the rest should be absolute, *i. e.*, in bed; but from the very beginning of the treatment, exercise, especially standing and walking, should be systematically carried out at definite intervals during the day. As a rule, very little exercise suffices in the beginning, and its amount should be increased only very gradually and with the greatest care.

The exercise should assume in all cases the form of **movements of precision,** such as have been introduced by Fraenkel in the treatment of locomotor ataxia. A large number of different movements of precision may be employed; more depends, however, upon the proper application of the principle than upon the employment of any one movement. The principle of precision being adhered to, much may be left to the ingenuity and skill of the nurse superintending the exercise. In the beginning, a relatively simple plan answers best. Thus, the patient should be instructed, as in the special instance of **tabes,** to place his feet carefully in walking upon a given line or stripe upon the floor, to follow with his feet special points in the pattern of the carpet, to walk forward, to walk backward, to turn first to the right and then to the left, to walk in a circle, to walk in figures of eight, and, finally, to walk up steps. In performing each movement, he is to be guided as much as possible by the criticisms of the attendant. Frequent repetition and the employment of the vision constantly to correct the errors of movement lead in many cases to a decided improvement—a kind of re-education of movement. In cases of beginning **amyotrophic lateral sclerosis,** or of **chronic myelitis,** the patient should be instructed to make a special effort to raise the thighs in walking so that the toes do not strike the ground and are not dragged. As far as possible by voluntary effort, the patient should be encouraged to imitate the normal action of the leg and foot, even if the result can be attained only by grossly exaggerating the movements or certain phases of the movements. A gesture of the leg and foot which is often of especial value, is one which exaggerates the '*Paradeschritt*' of the German soldier, or the goose-step. By special effort the thigh is well flexed upon the

abdomen, next the leg is extended, and finally the whole limb is thrown forward and the foot gently brought to the ground. Numerous variations of these gestures may be devised according to the special symptoms or weaknesses present in a given case.

The exercises, it need hardly be stated, should not be limited to walking, but may consist of complex movements of the foot and leg while the patient is seated upon a chair or lying upon his back. Appropriate exercises of the arms and trunk should likewise be instituted. (See also volume VII.)

The improvement that follows the careful application of these exercises, especially if disease be not far advanced, is frequently remarkable. In tabes it is often striking, and in cases of chronic myelitis and amyotrophic lateral sclerosis, very decided improvement may also be noted. Of course, in cases in which organic disease is far advanced, so that there is present extreme ataxia, excessive spasticity, or great weakness, little can be gained. In the early stages, however, much can frequently be accomplished. A cardinal principle should always be borne in mind, namely, that gymnastic procedures should be employed only as a part of a plan of treatment in which rest in bed plays the greater rôle. Further, the exercise should always stop short of fatigue. We should remember that in organic disease of the cord we deal with neurones which are enfeebled or are undergoing degeneration, and that if they be overtaxed, harm and not benefit will ensue.

Other measures may also be instituted. **Massage,** for instance, is often of decided value and should always be employed. In combination with passive movements or with slight resistive movements, it is a good adjuvant to or preparation for more active exercise. **Electricity** is also of service in some cases. It should be used especially in the form of the slowly interrupted faradaic or galvanic current in such a way as to bring about a limited number of distinct contractions in the flexor and extensor groups. In spastic conditions, for obvious reasons, it should be avoided.

By every means in our power, the general nutrition should be raised to as high a level as possible, and to this end, in addition to the physiologic procedures here detailed, various medicines may be employed. These include the ordinary tonics and alteratives. Little

that is tangible can, it is true, be traced to their administration—at least as regards the special symptoms presented by the cord; nevertheless, they may prove of general benefit. Again, it is important in syphilitic cases to follow the administration of the mercurials or the iodid by some preparation of iron or arsenic or possibly by cod-liver oil. Strychnin is also of value, but should not be employed indiscriminately. It is rather as a general tonic that it is of service than because of its specific action on the cord. When spasticity and contracture are present, it should for obvious reasons be avoided.

DISEASES OF THE BRAIN

The application of rest in diseases of the brain I have already largely considered in the discussion of such **functional** disorders as neurasthenia, hysteria, and hypochondria. That rest is of benefit in various **chronic organic conditions,** such as brain syphilis and other subacute affections, there can be no doubt. The question of its application is always to be decided by the symptoms present in each individual case. It is also largely influenced by the general condition of the patient. Applied in organic brain affections, it cannot of course be regarded as curative, but merely as placing the patient under circumstances most conducive to recovery when recovery is possible. The application of rest in the treatment of **paresis** and of **mental disorders** generally is considered in the following chapters.

Part II

THERAPEUTICS OF MENTAL DISEASES

PART II.—THERAPEUTICS OF MENTAL DISEASES

CHAPTER I

THE PREVENTION OF INSANITY AND THE GENERAL PRINCIPLES OF THE TREATMENT OF THE INSANE

The Prevention of Insanity; Marriage and Insanity. General Principles underlying the Treatment of the Insane; Rest, Isolation, Commitment to Asylum. Details of Management—Hygiene; Food, Forcible Feeding; Massage; Electricity; Bathing; Medication; Hypnotism and Suggestion; Restraint; Treatment of Bed-sores. Physician and Patient.

A discussion of the **therapeutics of mental diseases** resolves itself into a consideration, first, of the **prevention of insanity,** and, secondly, of the **treatment** of the various classes of the insane.

The Prevention of Insanity

The subject of the prevention of insanity offers an inviting and important field. From time to time, especially in the United States, radical measures have been proposed, such as legalized castration, and the prevention by law of the marriage of the insane. Like other measures that seek to remedy existing evils by extreme and revolutionary procedures, **castration** has not appealed to our communities or our law-makers, and the physician is not yet in a position where he will be compelled to decide the question of the castration of an individual to prevent the perpetuation of an insane stock; very probably he never will be. A discussion of the subject of the castration of the insane, no matter what view we may hold, either as to its justice or its efficacy, would therefore

be nugatory. As regards the **prevention of the marriage** of insane persons, the case is very similar. Legal prevention does not exist, and it is doubtful whether such legislation as that proposed some years ago in Minnesota would be effectual. The physician can exercise a salutary influence only if his advice be sought, and this is but rarely the case. Save in special instances, he should when the opportunity presents itself advise strongly against marriage. It would, however, be both unjust and unscientific to maintain that all persons who have suffered from mental disorder should not marry. Various factors should be taken into consideration. Mental diseases can be divided roughly into two groups—those which are, and those which are not, essentially neuropathic and hereditary. In the **hereditary** group we have the well-known degenerative psychoses; to wit, the various forms of arrest, imbecility, dementia præcox, mania, melancholia, circular insanity, paranoia, and the neurasthenic-neuropathic insanities. They all present marked neuropathic and hereditary factors, and it is the duty of the physician to advise strongly against the marriage of a person who has suffered from any of these affections. It is otherwise, however, with regard to insanities that depend for their occurrence upon accidental poisons or upon infection. Surely a person who has had, say, a prolonged delirium or a confusional insanity, following typhoid fever, ought not, for this reason alone, to be forbidden marriage. So it is with mental disorders following other infectious or exhausting diseases. Should such a patient, however, in addition present a neuropathic family history, this fact should weigh against marriage. That many persons who become insane in consequence of infectious diseases, visceral disorders, and exhausting affections of various kinds present also a family history of insanity, is well known. However, it is equally true that the factor of heredity may be entirely wanting, and in these cases there is no ground on which marriage can be forbidden.

Marriage in relation to insanity presents also another aspect; in persons of feeble and neurotic constitution, marriage may of itself prove a cause of insanity. The new functions assumed, the strain of pregnancy, child-birth, or lactation, may in women of feeble constitution, as is well known, result in alienation. The factors on which an opinion can be based are not often presented

to the physician, and he will rarely have an opportunity of giving advice. We should remember, on the other hand, that marriage, entailing as it does a physiologic method of living, may in itself be beneficial. This is true, not because of any special virtue in the marital relation as preservative of health, but because of the regularity of living which married life imposes upon men, on the one hand, and the functions of pregnancy and motherhood it confers upon women on the other. The living together of the sexes in the married state is the normal relation, and one conducive, other things equal, alike to mental and physical health. In men the aberrations, dissipations, and irregularities of youth are brought to an end, and in their place come wholesome responsibilities. In women, married life entails the physiologic stimulus of child-bearing and lactation, while the care of children and of household directs the mental activities into normal channels. After all, the question as to the advisability of a marriage can be decided only upon the facts presented by each individual case. No general rule can be formulated.

While the physician can do but little to prevent the marriage of neuropathic persons, he has at least frequently the opportunity of giving important advice as regards their **children.** His first duty, whenever possible, is to impress the parents with the necessity of rearing the child according to the elementary principles of physiology and hygiene. Neither the objects of this volume nor space will permit us to enter into a discussion of the physiology of childhood. How vast a field there is for care in the clothing, the feeding, and the training of the child need not here be pointed out. How greatly this field is neglected can be instanced by calling to mind the remark of Herbert Spencer that greater attention is sometimes given to the feeding of the horses in a gentleman's stable than to the feeding of the children in his nursery. Children are quite commonly given food which not only gives rise to serious digestive disturbances, but which is altogether unsuited for the proper development of their bodies, and at an all too early age they are permitted the use of stimulants. Suitable clothing, out-of-door life, and exercise are also frequently neglected, and due attention is not paid to the education and general upbringing of the child. A child, otherwise healthy,

is often brought up so loosely, is so indulged in every whim and caprice, is so pampered and petted, so thoroughly 'spoiled,' that when circumstances force the grown-up lad or adult woman to face the serious questions of life, energy, will-power, judgment, self-control —nervous strength in all its forms, is sadly lacking. On the other hand, children who are brought up harshly or too rigidly, who are denied the ordinary pleasures of childhood and youth, and upon whom a too close application to study, and perhaps to physical labor, has been forced, are likely to develop sooner or later various nervous disorders. Again, an education that provides a child simply with desk instruction, with books, to the exclusion of physical exercise; or an education that taxes a child too much in one direction, such as music, is also attended by grave dangers. The absurd and often cruel custom of forcing prolonged musical training, requiring many hours of daily practice, upon children who have no special or natural musical talent, and who have, in addition, all the other tasks of school, is only too common in this country. That under these circumstances hereditary neuropathies should come to the surface, is not surprising. Children are easily fatigued nervously, and we should remember, besides, that nervous fatigue is more readily induced in some children than in others. Especially is this true of the children of neuropathic parents. Unusual readiness of fatigue in a child is a symptom which should always demand serious consideration. Not infrequently children are inattentive at school, not from any wilful fault, but because they are incapable of sustained attention for a prolonged period. The inattention of children at school is in the vast majority of cases a fatigue symptom, and should be so regarded. A child is often treated as wilfully bad, stupid, or vicious merely because he is fatigued. How injudicious punishment is under such circumstances, how much it favors both mental and moral degradation, is not necessary to dwell upon. The pressure of school, especially at the period of puberty, is especially injurious. Not infrequently a child is precocious, learns with ease and but little effort in the years immediately preceding puberty, but during the time that puberty is being established becomes slow, inattentive, acquires only with effort, and makes but little progress. These changes are symptoms. Such a child should be watched with

the utmost care and the hours of mental and nervous work diminished; if not, for a time, abolished.

It is not possible to enter here into the details of the wants of childhood, and it must suffice to point out that all influences tending to lessen physical vigor or to interfere with nutrition—in a word, all infringements upon physiologic living—are to be guarded against. Especially during the developmental period between childhood and youth, sleep, exercise, and food should be well proportioned and the use of all stimulants, such as tea and coffee, and especially alcohol and tobacco, should be prohibited absolutely.

THE GENERAL PRINCIPLES UNDERLYING THE TREATMENT OF INSANITY

The treatment of insanity, after it has become established, resolves itself into, first, the application of physiologic methods; and, second, the use of drugs. At the outset let me point out that physiologic methods, which are so powerful in comparatively simple nervous disturbances, such as neurasthenia and hysteria, are much less productive of results in mental diseases. Nevertheless they should in some form be rigidly applied. In the management of mental disease, the first and cardinal principle is **rest.** Rest is often enforced by the nature of the illness; the patient's condition is such that he is of necessity in bed, or his condition is such as to compel his removal and his isolation in a hospital for the insane. In general terms it should be stated that so soon as a mental disorder has been recognized, mental and physical rest should as much as possible be enforced. In all of the acute psychoses, the patient fares best if it be possible to place him in bed. Cases of melancholia and other depressive forms of insanity can, as a rule, be placed in bed and remain there with but little resistance. Otherwise is it, however, with the various excited forms. Here the patient can only exceptionally be induced to lie down. Whenever possible, however, the patient should be placed in bed and a method of treatment instituted which in a degree approximates a so-called rest treatment. Even when the patient is restless and can be induced to remain in bed for comparatively short periods of time only, much good results.

In order to secure rest and quiet, or to bring about some diminution in the excitement, it is important to **remove the patient** from his own home. The well-meant but mistaken ministrations or officious interference of relatives and friends keep up the patient's excitement or intensify his depression. Isolation can, of course, be secured by commitment to an asylum. In the milder and non-asylum cases, it can be secured by removal to a private hospital or sanatorium, or by sending the patient, under the care of one or more nurses, to the seashore, to the mountains, or to some other available health-resort. Isolation from friends is, as a rule, quite as imperative in mental diseases as it is in neurasthenia and hysteria. It is not, however, absolutely necessary in all cases. As I have already pointed out in considering the treatment of neurasthenia, isolation is an expedient powerful for good; but it is sometimes powerful for ill—especially if it be too rigidly enforced or too long maintained. The benefits of isolation are so obvious in severe cases as to make a detailed discussion unnecessary. Time and again the opportunity occurs of observing patients who have been very much disturbed at home rapidly quieting under the isolation of a hospital. It is also observed, as a rule, that patients, who may be improving, are disturbed and upset, sometimes seriously, by the communications and visits of friends. Other patients, however, become depressed or have their depression increased if visits and communications be cut off entirely. They may believe that their friends have deserted them; or that their relatives no longer care for them. Especially is this untoward result apt to take place in the milder forms of melancholia which do not justify asylum commitment.

The question of the proper isolation of the patient is also intimately connected with his **personal safety** and with the safety of others. The danger of suicide, assault, or injury should never be lost sight of, and if the treatment of a patient whose symptoms are not so pronounced as to justify asylum commitment be undertaken at his own home or elsewhere, he should be surrounded with every precaution and safeguard; the incessant care and watchfulness of attendants must replace the locks and bolts of the institution.

In a large number of cases, the necessity of **commitment to an asylum** is so obvious, both from the nature of the illness and from

the violence of the symptoms, as to admit of no discussion. In another and not inconsiderable group of cases, however, the symptoms neither necessitate nor justify asylum commitment and the treatment must be conducted elsewhere. The factors entering into commitment will be discussed in detail in considering the management and treatment of the various mental diseases. It is necessary here only to formulate the following general rules:

First, commitment should be advised whenever the patient is dangerous to himself or to others.

Second, commitment should be advised when it is evident that the treatment cannot be carried on satisfactorily outside of an institution.

Third, in all cases in which the patient is neither dangerous nor violent, the physician should take sufficient time to satisfy himself thoroughly both as to the actual existence of insanity and as to the advisability of commitment.

Lastly, we should invariably decline to commit, whenever any doubt, no matter how slight, arises. The legal responsibility of physicians in making hasty or improper commitments should always be borne in mind.

The commitment of the patient to an asylum or his proper placing elsewhere having been determined, we are next confronted by the **details of treatment.** These consist of the general care and feeding, of the employment of the methods of physiologic therapy, and of the administration of medicines.

The importance of correct **hygiene** need not be dwelt upon, save to point out that in the care of the insane, owing to the long duration of the illness, careful hygiene is imperative. Air and sunlight, cleanliness and liberal feeding, are simple and yet essential physiologic measures. As will appear in the subsequent discussion of the subject, many of the patients take **food** willingly and readily. Others, again, must be urged to eat, and others still must be fed by artificial means; that is, so-called **forcible feeding** must be resorted to. Frequently it is of the utmost importance to give food in large quantities. As a rule, a generous, mixed diet, is indicated. It is neither necessary nor practicable in the larger number of cases to

institute special dietaries. Occasionally, however, it is important to diminish the amount of starchy foods, the amount of sweets, or the amount of red meats. This is especially the case when there is marked atony or catarrh of the stomach or other digestive disturbance, or when the illness is of such a nature that the patient exercises but little. Milk, as in neurasthenia and hysteria, is a valuable adjuvant to the other foods, and whenever forced feeding is attempted, it is indispensable. The indications for forcible feeding will be considered in detail in the following pages. (See also volumes v and vi.) It can be accomplished by **passing a stomach-tube** through the mouth. The tube, having a funnel-shaped extremity, should be warmed, well oiled, and, having been passed into the esophagus,—not the larynx,—liquid food in any desired quantity can readily be administered. As a matter of fact, however, feeding by passing the tube through the mouth is rarely practised. The mere effort of the operator to force open the jaws usually induces resistance and struggling on the part of the patient. The serious and exhausting effects of all measures involving violence need not be commented on; besides, the teeth of the patient may be broken or other injury may be done. Far easier is it, as a rule, to make use of the **nasal passages.** Almost always the tube can readily be passed through the nose. The tube should, as before, be warmed and oiled and the attempt made to pass it first in a horizontal direction along the floor of the nose. If obstruction be met with, the tube should be withdrawn and the other nasal chamber should be tried. The nasal septum is usually deflected to one side; but little difficulty is, as a rule, experienced. As the tube enters the pharynx, the patient may gag or possibly cough. The operator should wait quietly until these symptoms have subsided, when, the tube being passed on a little, a reflex act of swallowing occurs and it safely enters the esophagus. The head should now be thrown slightly back, so as to elevate the nose while the tube is gently pushed on until it is well in the stomach. Generally sixteen inches or more are passed into the nose before the stomach is reached. There is little danger of the tube passing into the larynx. In such case coughing and choking are very likely to occur. The tube having been properly placed, a pint or more of milk, with or without raw

eggs and perhaps with necessary medicines, is poured slowly and gently into the funnel-shaped end. After the feeding has been completed, the tube should be withdrawn slowly. Especial care should be taken to see that the tube is entirely empty, so that no milk or other material used in the feeding may enter the larynx. The entrance of food into the larynx and bronchial tubes leads to very serious results. It may find its way into the smaller air-passages and give rise to a fatal bronchopneumonia—an inspiration pneumonia. The fact that the pharyngeal and laryngeal reflexes are frequently lessened and sensibility obtunded renders care imperative. If the operator during the passage of the tube should feel some doubt as to the course it is taking, he can instantly detect the entrance of respiratory air into the tube by applying his ear to the funnel-shaped extremity. However, nasal feeding is commonly attended with but little danger and can often be practised for many weeks or even months. Whenever nasal feeding, or, for that matter, feeding through the tube by the mouth, is attempted for the first time, at least three assistants are needed. The patient should be seated in a chair. Especially is this necessary if he be at all likely to struggle. Otherwise, if bedridden and passive, he may be propped up in bed. A nurse should be stationed upon each side of the patient, so as to control the arms and legs. Occasionally another nurse is required to hold the head. The tube should then be carefully passed by the operator and the feeding accomplished. In very quiet patients, the tube can be passed with equal readiness with the patient lying upon the back. The majority of patients in whom forcible feeding is necessary offer but little resistance; they soon learn to adapt themselves to the procedure so that it can usually be carried out expeditiously and with but little trouble. Artificial feeding should be practised at least twice in the twenty-four hours, though in given cases it is necessary to resort to it more frequently. The tube should always be cleansed scrupulously. The nostril should also be carefully inspected afterward and a little liquid petrolatum applied. We should remember that too frequent or awkward introduction of the tube may irritate or inflame the mucous membrane.

If organic obstruction of the esophagus be suspected, or if the tube has been passed with difficulty, so that the operator has reason

to fear that it has become folded or bent upon itself, it should be withdrawn and another attempt made to introduce it. Sometimes it answers the purpose better to insert near the funnel-shaped extremity of the tube a piece of glass tubing through which the flowing of the liquid food can be observed. It is important to add that no force should at any time be used, either in the passage of the tube through the nasal chamber, or in its subsequent course through the esophagus into the stomach. The quantity of food administered must depend upon the individual judgment. It should be relatively small at first, especially if the stomach be irritable or vomiting seem likely.

Other forms of forcible feeding may also be attempted. Thus, a patient may be placed upon his back, the arms and head firmly held, while small quantities of liquid food may be slowly fed into the nose by means of a spoon, a feeding-cup, or a funnel. The food trickles back into the pharynx and is swallowed. Such procedures as these, however, are not often necessary, the nasal tube furnishing a much more satisfactory method.

Such physiologic measures as **massage, electricity,** and **bathing,** although of demonstrated value in the treatment of neurasthenia and hysteria, have only a limited application in the treatment of insanity. This is true especially of electricity, and to a somewhat less extent of massage and hydrotherapy.

Massage, in general so useful when patients are kept at rest, is impracticable in a large number of cases of insanity because of the extreme restlessness of the patient. In many of the depressive forms, the necessary handling and manipulation irritate and annoy the patient and often do more harm than good, while with disturbed and excited persons, it is out of the question. Massage is nevertheless of distinct value in the milder forms of mental disease, especially mild melancholia, and during the convalescent periods of various other affections.

Electricity also has a very restricted field, much more restricted, indeed, than that of massage. Like massage, it frequently irritates and distresses the patient instead of benefiting him. It may, however, be employed to a moderate degree in some of the mild depres-

sive cases. The **slowly interrupted faradaic current,** of sufficient strength to induce contractions of the various groups of muscles of the trunk and extremities, may be of benefit, just as in neurasthenia. Occasionally **static electricity** is employed; the static breeze to the head, general electrization, and sparking of the trunk and limbs are believed to act as stimulants. The application of static electricity in the treatment of insanity is, however, in my experience exceedingly limited.

In **bathing** we have a measure of undoubted value, and one which can usually be employed without much difficulty. In most cases of melancholia, for example, the patient will submit quietly to a bath in bed. Other patients, again, can be bathed very readily in the tub. The bath, it should be remembered, is not for purposes of cleanliness but for its direct sedative or stimulating action. It is as a nervous sedative and calmative that it is of most value. It is remarkable how in some disturbed cases a warm bath allays excitement. It is quite a common expedient with the Germans to give to excited cases a more or less **prolonged warm bath** (95° F., 35° C.) in the tub —the '*Dauerbad.*' (See also volume IX.) The patient is placed in a tub and permitted to remain in it not only for thirty or forty minutes, but at times for hours; indeed, the bath is sometimes made 'continuous' or 'permanent,' the patient eating and sleeping in the tub. He may be supported while in the tub by properly fastened sheets or may have a tray arranged from which he may eat, or upon which objects may be placed by which he may be amused or occupied. The relaxing or quieting effect of a prolonged bath is perhaps not so much appreciated in this country as it should be. Certain it is that baths of from twenty minutes to half an hour often have an admirable effect and are in many cases followed by sleep. Such baths are of course difficult to give to patients who are much disturbed or excited or to persons who are in a condition of excessive fear. If a struggle is necessary to give a patient such baths, they are not applicable. Much is lost in strength and great harm may be done by attempting to give them in unsuitable cases. Far more practicable is the **wet pack,** both because of the greater ease of its application and because of its very decided soothing and quieting effect when long continued.

As a rule, the wet pack is applied with a sheet which has been wrung out of water of a temperature of 60° to 70° F. (15.5° to 21° C.). I believe that it is wiser, because of the tendency on the part of the patient to struggle, to dip the sheet in water of a temperature of about 95° F. (35° C.). The result desired is not the stimulating effect of the cold, but the relaxing effect of prolonged warmth, together with the beneficial effects of thorough sweating. **Cold baths and douches** are rarely of use in the insane, except perhaps in the cases of convalescents. Patients with depressive insanity do not react well to cold, while in disturbed cases, the risk is incurred of increasing the excitement.

Medication.—Both because of the inefficiency of physiologic measures alone, and because of the nature of the symptoms, it is necessary with the large majority of the insane to employ medicines of various kinds. This is particularly true of sleep-producing and quieting drugs. In a large number of the disturbed cases, and in many of the depressive forms, sleep can be produced only by their use. In the administration of drugs we should bear in mind the general principle of employing the milder drugs in preference to those which are more powerful. The materia medica of our day happily furnishes us with a number of remedies of great value. Among them may be mentioned hyoscin, scopolamin, paraldehyde, the bromids, trional, sulphonal, chloralamid, urethane, and chloretone. The preparations of opium also have a distinct value. Chloral, on the other hand, is only occasionally applicable.

Among the most useful hypnotics at our command is **hyoscin.** The dose of the drug varies from one two-hundredth of a grain to one-fiftieth of a grain (say 0.3 to 1.3 milligram). Occasionally even larger doses may be administered. The effect of small doses, such as one two-hundredth of a grain, is gently sedative. This dose is insufficient to produce sleep, but occasionally produces relative quiet, even in cases of decided excitement. More frequently, however, one one-hundredth of a grain should be given. Larger doses, such as an eightieth or a fiftieth, may also be employed, though it is wisest to try minimal doses first. Large doses are every now and then followed by dryness of the throat, a sensation of constriction

about the head, heaviness of the tongue, uncertainty of the gait, and dilatation of the pupils. Other effects, such as irregularity of the pulse, oppression of breathing, visual hallucinations, delirium, and collapse, have also been reported, but these I have never observed. In most cases, it is well to limit the use of hyoscin to not more than one one-hundredth of a grain once or twice daily. Occasionally when it is found that the patient is tolerant of the drug, this dose may be given more frequently; exceptionally, even a fiftieth of a grain may be given, and repeated in the course of four or five hours. Because, however, of the possible unpleasant effect of large doses, it is best, instead of repeating the dose, to reinforce the action of the drug by the administration of some other narcotic. Given at the same time with paraldehyde, for instance, an almost immediate and most satisfactory sleep can be brought about.

Scopolamin, an alkaloid closely resembling hyoscin and one which is by many considered pharmacodynamically and therapeutically identical with the latter, is also a remedy of the very greatest value. In my experience, its action differs somewhat from that of hyoscin, a fact that is perhaps in keeping with the different sources from which these two alkaloids are derived. Merck's hyoscin is obtained from hyoscyamus, while Merck's scopolamin is obtained from another solanaceous plant, *Scopolia atropoides*. It seems to me that scopolamin is more constant in its action than hyoscin, is effective in a somewhat smaller dose, and is never attended by the least evidence of depression of any kind. The indications for its use are the same as those for hyoscin. Like the latter, it can also be given in combination with paraldehyde or other of the hypnotics.

Paraldehyde is a remedy of the greatest utility. Its effect is almost immediate. It can be used in relatively large doses, and the sleep produced is not followed by depression or impairment of the patient's lucidity. Its disadvantage is that the sleep is apt to be of short duration—three or four hours only, sometimes less, according to the degree of excitement present in the given case; though at times the sleep lasts an entire night. Moreover, the odor and taste of the drug are decidedly unpleasant to some patients. It is also eliminated very slowly, so that the odor persists for many hours

—sometimes for an entire day—upon the breath. Sleep, as already stated, ensues very quickly in from ten to fifteen minutes even in cases of great disturbance. A dose of from one to two teaspoonfuls can be given, suspended in a little syrup and water or in whisky. If the sleep produced is of short duration, no danger is incurred by repeating the dose.

Trional is a remedy which is efficacious in a large number of disturbed cases. It possesses the advantage of being somewhat more rapidly absorbed than sulphonal and of inducing a quiet sleep extending over six or seven hours, more or less, according to the nature of the affection and the degree of the excitement. The sleep, too, is apt to be followed by a waking period of relative quiet or markedly lessened excitement, during which the lucidity of the patient is not at all impaired, or may, indeed, be increased. Mental slowing, slight difficulty of comprehension, may, however, be noted; occasionally also slight dizziness; but the latter result is infrequent and rarely pronounced. Trional may be given with perfect safety, in ten-, fifteen-, or even thirty-grain doses (1 to 2 grams); in an extensive experience in the use of the drug, I have never observed any untoward effect. The reckless administration of the drug, its too frequent repetition or prolonged continuance, may, however, be followed by fatal hematoporphyrinuria. Marked ataxia, tremor, profound prostration, and mental obtusion have also been observed. These effects are so infrequent that I am forced to the belief that they are dependent upon an incautious use of the drug or possibly upon personal idiosyncrasies.

Sulphonal also is a remedy of great value. It is more slowly absorbed than trional, but its effect lasts longer. It is likewise followed by a period of sedation in the waking state which is, indeed, more pronounced than that which follows trional. There is also noticeable a slight mental obtusion, especially when decided doses have been used. Trional is absorbed more readily and its hypnotic effects pass off somewhat earlier than those of sulphonal. Sulphonal is absorbed slowly and the hypnotic effect coming later, lasts longer. It is therefore of advantage in many cases to give trional and sulphonal together in a single dose. Thus, ten grains of trional may be given with ten grains of sulphonal, or, it may be,

fifteen grains of trional with five grains of sulphonal, according to the effect that is desired. Sulphonal may be given in from ten- to thirty-grain doses. Because, however, of the mental obtusion, heaviness, and drowsiness which ensue in the waking period after large doses, it is wiser to give it in relatively small doses, and preferably, as above suggested, in combination with trional. Anuria and hematoporphyrinuria, it should be remembered, may also follow excessive doses of sulphonal or doses too frequently repeated. Further, if large doses be persisted in for long periods, marked nervous and mental depression, with unsteadiness of gait and weakness of the limbs, may develop.

Chloralamid is also a remedy of some value. The administration of thirty grains is, as a rule, followed in about half an hour by gentle sleep. The sleep is durable and is not usually followed by depression. The action of the drug, however, is so mild that when very severe excitement is present it is of comparatively little service.

Hedonal is among the drugs useful at times. The dose varies from fifteen to thirty grains. The sleep produced is gentle, simulating normal sleep, and is not followed by vascular or nervous depression. Unfortunately, the sleep lasts, as a rule, not more than five hours. In my experience the drug is not adapted to cases in which there is great excitement.

Urethane is somewhat uncertain in its action; a fact which greatly impairs its usefulness. Its dose is from thirty to thirty-five grains. It is not followed by depression.

Chloretone is of occasional value. It has also the drawback of being somewhat uncertain in its action. The dose varies from ten to thirty grains. In fifteen-grain (1 gram) doses, it usually produces a gentle sleep, not followed by depression. Occasionally, however, very marked depression ensues; and this may follow a minimum dose in patients by whom on previous occasions thirty-grain doses have been well borne. The irregularity of its action and the occasional depression produced by the drug are not accounted for thus far, and weigh much against its usefulness.

Chloral possesses some measure of usefulness, chiefly because of the certainty of its action. Unfortunately, however, its depressing effect upon the circulation renders its employment in large doses, and

especially in repeated doses, unwise. In cases which fail to yield to the milder hypnotics, chloral may be used. Ten- to fifteen-grain doses as a rule suffice. Twenty grains should infrequently be given and should only occasionally be repeated. Chloral has the further advantage of being suitable for administration by the rectum, and this gives it great value in cases in which it is impossible to administer a sleep-producing remedy by the mouth, and in which for other reasons it is not wise to give hypodermic injections. A solution of from twenty to thirty grains may be injected into the bowel, and if necessary the dose may be repeated once at the end of four or five hours. In the therapeutics of mental diseases, chloral has been largely substituted by trional and sulphonal. Its occasional usefulness, however, should not be forgotten. An important fact also should be borne in mind—namely, that its efficacy is greatly enhanced by the addition of a small quantity of morphin; thus, a dose of ten grains of chloral with an eighth of a grain of morphin has frequently a most happy effect. The combination is of very decided value; the result is better than when either drug is used alone even in massive dose. The combination should not, of course, be frequently repeated. Sometimes a bromid may be combined with chloral and morphin, permitting the dose of chloral to be much diminished.

The **bromids** are not only of value in various functional nervous disorders, but also in the excitement and disturbance of mental diseases. Because, however, of the undoubted depression which attends their long-continued use, and because of their interference with digestion, they should be avoided as much as possible. They are also decidedly inferior as sleep-producing remedies to other drugs. In stages of great excitement they are, at most, of use only as adjuvants. The various salts of bromin differ but little from one another in their action. The potassium salt is more depressive than some of the others and probably interferes more with the digestion than does sodium bromid, while strontium bromid is probably tolerated best of all. Ammonium bromid has, however, in my hands proved more acceptable than any of the others, especially in cases in which the bromid must be administered over long periods of time. It is less depressing than any of the other forms, and when well diluted, it is not at all irritating to the stomach. Bromids are

sometimes best given in a pepsinated vehicle, in milk, or in carbonated water.

Opium as a mere sleep-producing remedy has not a wide application. The nausea that attends its use in some cases, and the constipation it induces in others, are serious objections. Again, in order to produce sleep by opium or morphin alone, large doses are necessary, and the danger of overaction from large doses is another serious objection. The proper function of opium as a sleep-producing remedy in mental diseases is in association with other drugs—especially, as already mentioned, with chloral. Occasionally its combination with chloralamid is followed by very happy results. The two drugs reinforce each other, even when given in moderate doses. Morphin may also be very advantageously combined with scopolamin or hyoscin, say one-eighth or one-sixth grain (1 centigram) of morphin with one two-hundredth or one one-hundredth grain (0.3 to 0.6 milligram) of scopolamin or of hyoscin. My preference is for the combination with scopolamin.

Opium and morphin, however, have a field of usefulness in the treatment of conditions other than mere sleep disturbances. They are quite frequently employed for long periods of time in small or even large doses in mental states attended by great suffering, notably melancholia. Used carefully, no ill effects are noted; they do not disarrange any of the functions nor is an opium habit subsequently formed. The details of their administration in melancholia will be considered in connection with the treatment of that disease.

In considering the **administration of narcotics** to the insane, it is important to bear in mind that the period during which they must be employed may in individual cases be very prolonged; that is, it may be necessary to give them for many days or weeks in succession. As has already been pointed out, preference should always be given to the milder narcotics. It is also an important point to remember that it is not wise to continue the administration of the same drug or the same combination of drugs continuously night after night. It is an excellent plan to **alternate** the medicines; thus, trional can be given upon one evening and chloralamid upon the next; or, hyoscin upon one occasion and chloralamid upon another.

The helping-out value of an occasional dose of paraldehyde should not be forgotten.

From an *à priori* standpoint, all narcotics are objectionable. However, the deterioration and demoralization of the patient from continued loss of sleep and unrest is worse; so that it is wisest in given cases to use them more or less. They should always be used with judgment and with discretion, but if used at all, they should be given in sufficient doses to do the work intended. The amount required by the patient can, as a rule, be determined by a careful trial. Moderate doses should be given first, and, if necessary, larger doses later.

The **alterative** remedies, the iodids and mercurials, are at the present day comparatively little used in asylums for the insane. If brain syphilis be present, they are of course of value. They are also employed for varying periods of time in the majority of cases of paresis. Cases of dementia resulting from gross diseases of the membranes and vessels of the brain also offer a field for their use. The details of their administration will be considered later on.

The various **tonic** remedies may be employed as indications arise. The so-called nerve tonics are of little value. Strychnin is of decided benefit in cases with marked depression of the circulation. Its action upon the nervous system in mental diseases is unimportant. Digitalis, strophanthus, and nitroglycerin are also useful, at times, if there be cardiac weakness.

The bitter tonics possess a limited field of usefulness only. Of themselves, they rarely induce an insane patient to eat. Occasionally iron is of value, notably in cases in which there is anemia. The same is true of arsenic. The administration of these medicines does not, however, have any effect upon the mental disease itself.

Laxatives must be employed in quite a large number of cases of insanity. Here special indications must determine the choice of individual remedies. These it is not necessary to discuss in detail. Because of the atonic condition of the intestinal tract in so many of the patients, it is often advisable to use cascara; and

because of the catarrhal conditions present in so many others, it is at times advisable to use sodium phosphate, Carlsbad salts, or other saline.

Thyroid extract is a useful remedy in a limited number of cases. Its value in myxedematous dementia and cretinism is beyond question. It is also of value occasionally in some of the depressive forms of insanity, though this value is limited. (See volume XI.)

Hypnotism and Suggestion.—So far as my own experience goes, **hypnotism** plays no rôle in the treatment of insanity. **Suggestion,** however, without hypnotism, is undoubtedly useful in some cases. Especially are suggestions of returning health and happiness valuable in the convalescent stages of the depressive affections; for instance, in the convalescence from melancholia. Suggestions made under these circumstances have a distinctly bracing and stimulating effect. Under their influence, the patient eats better, sleeps better, and suffers less. However, suggestion, even of this kind, is applicable only in a limited number of cases.

Restraint.—At times the question of restraint presents itself. In modern asylums with their manifold precautions for safety, and especially with the large number of attendants, physical restraint has almost entirely disappeared. Camisoles, anklets, and wristlets are rarely required and still more rarely justified. However, in exceptional instances, restraint is not only justified, but imperative. Thus, the patient may be constantly endeavoring to injure his own person or is engaged in a constant and exhausting struggle with his surroundings and attendants. Again, restraint may be imperative in a patient who has suffered from a serious surgical injury, such as a fracture of the limb, and this applies of course also to a patient upon whom some surgical operation has been performed necessitating absolute quiet thereafter. Usually a sheet properly applied answers every purpose. (See volume V.) At other times a camisole—a canvas shirt with long, closed sleeves and laced up the back—is most satisfactory. If restraint be applied, the patient should be none the less carefully watched. Patients frequently make renewed

attempts to struggle after the restraint is applied, and if not watched may, in spite of the restraint, injure themselves. We should remember also that if restraint alone be depended upon to quiet a patient, the continuous struggling likely to ensue greatly favors exhaustion. It is wisest therefore in some cases to give nervous sedatives or hypnotics at the same time.

Treatment of Bed-sores.—When bed-sores supervene in the insane, they should, of course, be treated surgically. The importance of cleanliness cannot be too strongly insisted upon, though the difficulty of securing this in cases in which there is involvement of the sphincters is obvious. The danger of septic infection is always present and should as much as possible be guarded against.

Some years ago, the late chief resident physician of the Philadelphia Hospital instituted a special mode of treatment by local feeding, which in a large number of cases is followed by healing or at least great improvement of the ulcer. Dr. Hughes abandoned corrosive sublimate and other antiseptic washes. The sore is simply washed with warm water and Castile soap, and then thoroughly rinsed. Following this, a liquid preparation containing blood is poured over the surface of the ulcer, while pledgets of gauze saturated with this solution are also applied. The whole surface is then carefully covered with an ordinary surgical dressing. In a few days great improvement is observed; the ulcer begins to look clean and healthy, granulations spring up with great rapidity, and in due course they assume an epithelial covering. The repair brought about by this method appears to be quite durable. Should the tissue break down anew, the treatment is repeated as before.

Physician and Patient

It is necessary to consider briefly the personal relations of the physician to the patient. It should not be necessary to state that the physician's attitude should be one of kindly interest, and that as far as possible his conduct should be such as to inspire confidence. While he may never be able to enter into close relation with some patients, it is quite possible to establish friendly relations and confidence in others. It is, in my opinion, always essential that the

physician should not deceive the patient, nor should he allow any deception to be practised upon the patient by others. Patients not infrequently become aware of intended deceptions and it becomes correspondingly difficult to gain their confidence. In regard to the delusions of the patient, the physician should prove himself a quiet listener. While he should be careful not to agree with the patient, nor even to appear to accept the delusions in any way, he should in a large number of cases avoid an open contradiction. Direct and flat contradiction of the patient's belief sometimes greatly disturbs him and may bring on attacks of marked excitement. Besides, in most cases such a course is for the time being useless. Altercations and discussions are to be deprecated. Passive resistance to the patient's delusions is a far more effectual method of dealing with the situation. In many cases unnecessary talking should be avoided. Threats should never be indulged in. Attempts at discipline or punishment are equally reprehensible.

CHAPTER II

THE TREATMENT OF THE SPECIAL FORMS OF MENTAL DISEASE

Clinical Grouping of Mental Diseases. Delirium, Confusion and Stupor; Melancholia, Mania, and Circular Insanity; Paranoia; The Neurasthenic Insanities; Simple Dementia; Paresis; Insanities of Adolescence; Insanities of Intoxication and the Drug Habits.

As I have elsewhere pointed out, mental diseases readily arrange themselves in five great groups, as follows:

I. Delirium, Confusion, and Stupor.

II. Melancholia, Mania, and Circular Insanity (melancholia-mania as it is also properly termed).

III. Paranoia.

IV. The Neurasthenic Insanities.

V. Simple Dementia.

It will be most convenient to consider the treatment of the various mental affections in the order in which they are enumerated.

DELIRIUM, CONFUSION, AND STUPOR

Delirium

It is necessary first to review some of the elementary facts in relation to delirium.

As I have elsewhere shown, the various forms of delirium separate themselves clinically into three types: First, **simple febrile delirium;** that is, the delirium which is a symptom and accompaniment of the various exanthemata, infectious fevers, and acute visceral diseases. Secondly, **specific febrile delirium,** that is, the delirium which is variously known as *delirium grave,* typho-mania, acute delirious mania, Bell's delirium, or acute delirium. This type of delirium is probably a specific clinical entity. It is very active, is

characterized by a febrile state, the rise of temperature being generally quite high, while there are not present any surface lesions such as are found in the exanthemata, nor any sign of visceral involvement, such as pneumonia or meningitis. It would seem therefore to be due to a specific infection, the bacteria or toxins of which expend their action upon the brain, without giving rise to lesions of the cutaneous surface or of the viscera. The third form of delirium is **afebrile delirium;** this type frequently makes its appearance as a sequel of acute exhaustion or of acute infectious diseases and intoxications. It is not accompanied by fever, but by all the signs of profound asthenia. Every now and then it ensues during the post-febrile period of one of the exanthemata, for example, typhoid fever. It is a not infrequent sequel of influenza. At times it follows trauma, surgical operations, or the shock and infection of labor. Exhaustion, infection, or intoxication appear always to be prominent factors. As examples of afebrile delirium following the action of poisons, we may instance the delirium from alcohol, from lead, from the prolonged misuse of drugs.

The **symptoms of delirium,** no matter what its origin, are always essentially the same: illusions, hallucinations, confusion and hurry of thought, fleeting and fragmentary delusions, and incoherence. The same elements are always present. This is true whether the delirium occur in a young person or an old person; whether it be mild or whether it be furious; or whether it follow typhoid fever, pneumonia, or erysipelas, on the one hand, or alcoholic, plumbic, or other intoxication, on the other. It should be added also that the deliria are always relatively short in duration—a few hours, a few days, or, at most, a week or two.

Treatment.—The treatment of delirium is based upon general principles. When occurring as simple febrile delirium and when mild and purely symptomatic in character, delirium can in practice be entirely ignored. Its treatment in such case is essentially the treatment of the underlying disease. Every now and then, however, the delirium accompanying the infections—for example, typhoid fever—is so grave as to necessitate some modification of the treatment. Especially when occurring early in the course of the disease, it is of evil omen, indicating that the nerve-centers have been over-

whelmed by the invasion of the bacteria or their resulting toxins, and that grave exhaustion has supervened. Two factors must therefore be taken into account: first, the direct toxic action upon the nervous system, due to the infection; and, secondly, the exhaustion. Similar factors doubtless play the essential rôle in specific febrile delirium, while in the afebrile form we deal with the late toxins of infection or other poisons, and also with exhaustion.

Obviously, in the treatment three **indications** must be considered: first, the **elimination** of the poisons; secondly, the **allaying** of the excitement; and, thirdly, the maintenance of the nervous **strength.** So far as possible, these indications must be met promptly and simultaneously. The means at our command consist in the administration of **liquids** in large quantities, in the free use of **baths,** in the free administration of **nourishment,** and, pharmaco-therapeutically, in the use of **cardiac stimulants** and **nervous sedatives.**

Liquids in large quantities of course act as diuretics, while the action of the skin can be profoundly stimulated by **hydrotherapy** in various forms. When fever is present, cold sponging, cold sprinkling, and other forms of **cold bathing** (see volume IX) are applicable. In the afebrile forms of delirium—*i. e.*, those which come on in the post-febrile or convalescent period of infectious diseases, as typhoid fever; or which result from drug intoxications, as alcohol—the most effective form of hydrotherapy is the prolonged **warm immersion bath.** The temperature of the bath should range from 90° to 95° F. (32.2° to 35° C.). In household practice an immersion bath is not often applicable, because a bath-tub is not always convenient or because the patient struggles too violently. Much more available, and in many cases more efficacious, is the **warm wet pack.** This can be given in the ordinary way, save that the sheet, instead of being dipped in cold water, is dipped in tepid water. The patient having been thoroughly and closely wrapped, blankets are applied over the sheet and the patient allowed to remain in the pack for about an hour. As a rule, profuse diaphoresis results with marked diminution of the excitement. In delirium of marked severity, however, both the wet pack and the immersion bath have serious drawbacks. The necessary manipulations of the pack or bath may add greatly to the fright and confusion

from which the patient is suffering and may greatly aggravate his exhaustion. Further, neither an immersion bath nor the wet pack should be repeated frequently. Especially is this caution necessary in cases of prolonged delirium and in those in which exhaustion is a marked factor. The depression from the excessive sweating induced by the wet pack should in this connection especially be borne in mind.

It is obviously of the utmost importance, especially if the delirium be at all violent and the patient be expending much strength in his struggles, to administer **sedatives** of various kinds. No well-founded objection can be made to their judicious administration. The quiet and the sleep produced are of the utmost benefit to the patient. As a rule, the milder hypnotics enumerated in the preceding chapter prove efficacious. Hyoscin or, better still, scopolamin (see page 173) should be given in a dose of one one-hundredth of a grain. When the patient is greatly excited, this agent may fail to produce the desired sedation, and in such case recourse should be had to trional and sulphonal. As already pointed out, these drugs can be administered advantageously in combination; for instance, fifteen or twenty grains of trional with ten or fifteen grains of sulphonal. Even when the excitement is intense such a combination frequently induces sleep of many hours' duration. So valuable are these remedies that every possible effort should be made to administer them. Many delirious patients, especially alcoholics, will swallow readily everything that is offered them, and in such cases bromids or other medicines can be given. Regarding the bromids, the depressing action of the large and repeated doses usually necessary should not be lost sight of; above all should they be avoided in patients whose cardiac action is weakened. Paraldehyde, a remedy of undoubted value, is rejected in most cases of active delirium, and yet is by some patients, notably the alcoholics, greedily accepted, especially when administered in whisky. The paraldehyde has the great advantage of producing profound sleep within a few minutes, though, as has been pointed out, the sleep may be of only two or three hours' duration. It is a valuable adjuvant when hyoscin or scopolamin, or trional and sulphonal, have been given; for it hastens the sleep which ensues upon these drugs only after a decided interval of time. In non-alcoholic cases, because of its nauseous taste and disagreeable

odor, and doubtless also because of the hallucinations and illusions of taste already present, it cannot be administered, and we must resort to other measures.

If the patient be so greatly disturbed that it is impossible to induce him to swallow, it may be necessary to resort to hypodermic medication. In such cases small doses of hyoscin hydrobromate, associated with moderate doses of morphin, may have a most happy effect; one one-hundredth of a grain of hyoscin or scopolamin associated with one-eighth or one-fourth of a grain of morphin frequently proves efficacious. In some cases, however, it is wise to avoid the use of the hypodermic needle because of the additional fear which the puncture inspires in the patient. The latter often believes that he has been stabbed, and his excitement may thereby be greatly increased for the time being. In some cases it is a good plan, instead, to administer chloral by the rectum, say a single dose of thirty or forty grains.

Regarding the **choice of hypnotics** in delirium, or the method of administration, no hard and fast rule can be formulated. General principles alone can be indicated. It should be borne in mind, other things equal, that the best results are obtained in cases in which they are used promptly; even in patients who are treated by sponging, warm baths, or wet pack, some hypnotic should be administered early and in sufficient dose; the effect of the bath is thereby enhanced and prolonged. Furthermore, patients who struggle so violently that a bath is out of the question may become amenable to the wet pack or other hydrotherapeutic procedure after hypnotics have been administered.

In addition to our efforts to allay the excitement, restlessness, and struggles of the patient, measures should so far as possible be instituted to **maintain his strength.** In all cases of delirium in which the symptoms are at all pronounced, there is danger of exhaustion. Indeed, exhaustion always supervenes in the grave forms, and here constitutes, barring accident or injury, the one source of danger. In **specific febrile delirium** (Bell's delirium), so commonly fatal, it is the usual cause of death. It behooves us, therefore, to make every effort not only to combat the impending exhaustion, but if possible to anticipate it. Liquid food, milk,

eggs, beef preparations of various kinds, should be administered in as large quantities as possible. Feeding in delirium is often excessively difficult; the excitement, the confusion, and the struggles of the patient may be so pronounced that for a time it may become impracticable to administer nourishment in the ordinary way. Frequently the attention of the patient cannot be attracted, or, if attracted, it can be held only for very short periods of time. At other times he cannot be made cognizant of the food; he may believe that it is poisoned, or he may regard it as some offensive or disgusting substance. Notwithstanding the difficulties, every effort should be made to administer food. As a rule, it is possible to get down sufficient for the immediate necessities of the patient, though the total amount for the twenty-four hours may be small. **Rectal feeding** may become necessary, but under ordinary circumstances it is not practicable to resort to **forcible feeding** with the tube. In cases so severe as to suggest it, forcible feeding is very difficult. In practice it should be resorted to only with patients who subsequently to the excitement become stuporous.

If loss of strength be pronounced, recourse should be had to **heart tonics** and **stimulants.** In this connection strychnin, digitalis, strophanthus, nitroglycerin, cocain, and perhaps adrenalin (or suprarenalin) should be borne in mind. The general principles underlying the application of these drugs in other asthenic states apply equally here. Strychnin in doses of a fortieth, a thirtieth, or even a twentieth of a grain every four hours, digitalis in half-ounce doses of the infusion at similar intervals, are in many cases urgently indicated, especially if cardiac weakness be marked. The value of cocain, both as a cardiac and nervous stimulant, should in cases of this kind not be forgotten. Hypodermic injections of a sixth or a fourth of a grain at four-hour intervals are often of the greatest value. Alcohol also may be employed with advantage, being administered very much as in the asthenic states of the continued fevers. Not only does it have a favorable influence upon the circulation, but also a calmative and sedative effect upon the nervous system.

By far the greater number of the cases of delirium which make their appearance during the post-febrile period of the infectious

fevers, *i. e.*, the afebrile deliria, terminate in recovery. As a rule, a subsidence of symptoms is noticeable in a few days, and it then remains to treat the case by simple supporting measures. If marked asthenia supervenes, **rest treatment** with massage and perhaps other physiologic measures should be instituted and maintained until recovery is complete.

Simple febrile delirium runs a course dependent upon the disease of which it is symptomatic, and no special comment as to its subsequent management is necessary. Specific febrile delirium (Bell's delirium), however, usually offers an exceedingly grave prognosis, and in cases of recovery the convalescence is exceedingly tedious. Supporting and tonic measures are therefore especially indicated throughout.

Confusion

Confusion, confusional insanity, amentia, or *Verwirrtheit*, as it is variously termed, presents an etiology similar to that of the afebrile deliria. Like the latter, it frequently comes on during the post-febrile period of the acute infectious diseases, for example, typhoid fever. It is seen typically in the confusion which so often follows influenza or which may make its appearance after erysipelas, acute articular rheumatism, the puerperium, profound exhaustion, trauma, surgical shock, etc. Like the afebrile deliria, it may also follow the prolonged abuse of drugs and stimulants. Into its causation there enter, as in delirium, two factors: first, the toxins of infection, or other poisons; and, secondly, persistent exhaustion. Confusion differs from delirium not only in the less violent, less acute character of its symptoms, but also in its duration. As a rule, when once established it lasts many weeks, three or four months being a not uncommon period. There are present, as in delirium, hallucinations and illusions, confusion of thought, and incoherence; hurry of thought is also present, though cerebral activity is never aroused to the same pitch as in delirium.

Treatment.—Because of the profound exhaustion, it is of the very greatest importance to place the patient in bed. In many asylums, cases of confusional insanity are permitted to be up and about the wards. Better progress by far, however, is made when

they are placed in bed. As a rule, food is administered more easily in cases of confusion than in cases of delirium. The patients also permit themselves to be handled and bathed more readily. Not infrequently also it is possible to institute, especially during the period of convalescence, **massage.** It is wisest to imitate, so far as possible, the strict **rest methods** of the full bed treatment of neurasthenia (see page 48). The rest in bed, especially in the early stage of the affection, should be absolute. **Forced feeding** should be instituted, as in neurasthenia—milk, eggs, and other food being given in large quantities.

Frequently it is necessary to give hyoscin or scopolamin, trional, sulphonal, or like remedies to produce sleep, although this need is not so urgent as in delirium; nor must the drugs be given in so large amounts or so frequently repeated. In this connection we should bear in mind the long duration of the affection, and reduce the use of hypnotics as much as possible. Tonic and supporting remedies are also indicated. Strychnin, digitalis, or iron may at various times be employed. The more rigid the rest, the more absolute and conservative the supporting treatment, the better will be the result and the less the necessity for medication. Time is, however, a necessary element in all cases. In the vast majority, simple physiologic methods are followed by complete recovery.

Stupor

In stupor, which is the third member of the first group of mental affections, we have a disease closely allied both to delirium and to confusion. Every now and then a case is met with, in which some infection, poisoning, or profoundly debilitating influence is followed by mental confusion, but in which the confusion is tinged with dullness and hebetude, and in which little by little mental obtusion becomes more and more pronounced until finally the faculties are completely in abeyance. Such a case forms one of stupor, or so-called stuporous insanity or acute dementia. Simple stupor does not make its appearance suddenly. Generally there is a prodromal period of several days or weeks, during which, as in the beginning of confusional insanity, the patient is hallucinatory and confused; and, indeed, in the beginning the case resembles one

of confusion without much excitement. Little by little mental obtusion becomes more and more pronounced and the power to appreciate the surroundings less and less, until finally the patient lies motionless in bed, oblivious to everything about him.

Treatment.—The treatment of stupor is essentially **supporting** in character. Like confusion, the disease is of long duration; many weeks, perhaps several months, pass by before convalescence is fully established, and during this time as much food as possible must be given to the patient. Feeding does not usually offer much difficulty; frequently it is possible to administer very large amounts of milk and raw eggs,—three quarts of milk and six to eight eggs daily (see page 56), with other food in addition. Now and then stupor is so profound as to necessitate a resort to **forcible feeding.**

Supporting drugs are occasionally necessary, especially when there is marked feebleness of the heart and general depression of the circulation, as shown by coldness, moisture, and lividity of the extremities. The general principles of **rest** treatment should be rigidly applied. **Massage,** among other measures, should also be used. We should remember, however, that, as in confusion, massage may not be well borne. It may irritate and annoy the patient.

As might be supposed, quieting remedies are rarely indicated. However, every now and then stupor is associated with a certain amount of physical restlessness; and in this case, small doses of some gentle hypnotic may be employed. The management of stupor is essentially that of confusion, and, as in confusion, the more strict the application of rest and supporting measures, the better the general result.

Considerations of Management Common to Delirium, Confusion, and Stupor

The foregoing paragraphs show that delirium, confusion, and stupor present much that is common, not only in their symptoms, but also in their treatment. They should likewise be dealt with in common from another, and a general, point of view. Thus, hallucinations, illusions, and distressing delusions being prominent symptoms, this fact should be considered both in the surroundings and in the method of dealing with the patient.

The patient having been placed in bed, all objects that might favor the production of delusions or multiply hallucinations and illusions—such as pictures on the wall, dark and suggestive ornaments, striking furniture, fur mats, and similar articles—should be removed from the room. The room should be moderately darkened, but not enough to give rise to illusory shadows or to make the objects in the room indistinct. The utmost possible quiet is necessary. All persons should be excluded from the sick-room except the nurses immediately in charge of the patient. The nurses should not walk about needlessly, nor should they engage in unnecessary talking. Least of all should they carry on whispered conversations or indulge in gestures or other demonstrations before or over the patient. Some attention should be given also to the dress of the nurses. There is no objection, as a rule, to the ordinary white uniform, but unusual or striking articles of attire, as a black dress, a black shawl, a hood, should be avoided. In many instances it is wise to remove the nurse's cap, as the latter sometimes impresses the patient strangely. Care should be taken not to approach the patient suddenly or in an unusual way. Especially should the nurse avoid bending over the patient from the head of the bed; the inverted face of the nurse sometimes badly frightens the patient. Attention to simple details, such as are here hinted at, is in practice quite important.

Commitment to Asylum.—The question of the commitment to asylums of patients suffering with delirium, confusion, or stupor, must be decided by the circumstances of each individual case. **Deliria** are usually of short duration; and when adequate assistance can be obtained, treatment can be carried out efficiently and satisfactorily at the patient's own home. It is certainly not justifiable to commit a patient to a hospital for the insane because of an affection of which the active stage is usually limited to a few days. In **confusion,** the circumstances which usually obtain do not differ, so far as nursing and medical attendance are concerned, from those surrounding a patient ill with a continued fever. The patient is, as a rule, not violent, and can readily be restrained and controlled. Two nurses, one relieving the other, are necessary in most cases, as it is not safe to leave the patient alone. Because of the

long duration of confusion, the expense involved by trained nursing and medical attendance outside of a hospital in many instances necessitates the commitment of the patient to an asylum. In other cases the violence of the symptoms and unusual difficulty of management may also determine commitment. Similar remarks apply to **stupor.** Stupor can be treated with every chance of success by skilled nursing and medical attendance outside of the asylum. Occasionally the undue prolongation of the symptoms and the continued expense may necessitate the patient's commitment.

Special Indications.—When any of the members of this group —delirium, confusion, and stupor—are related to or accompany special pathologic conditions, as rheumatism, gout, diabetes, or metallic poisoning,—for example, plumbism,—this relationship must of necessity be considered in the treatment. In addition to the physiologic and symptomatic measures described, special remedies and measures are to be directed against the underlying condition. These it is unnecessary to detail here. Similarly, when mental symptoms accompany tuberculosis, malaria, malignant or other visceral affections, the treatment of the insanity must necessarily include the treatment of the physical disease from which the patient is suffering. In all of these affections, the mental symptoms assume the form of more or less well-defined delirium, confusion, or stupor. It is true that special phenomena predominate in certain of these diseases. Thus, in **diabetes** the tendency is toward confusion with depression resembling melancholia; at other times stupor or coma supervenes. In **gout,** active delirium or active confusion dominates the picture; while in rheumatism, delirium, confusion, and stupor appear in practically an equal number of cases. In **malaria,** confusion, or a stuporous state sometimes spoken of as pseudo-paresis, is most frequently present. In **tuberculosis,** confusion, with depressive and persecutory ideas, is not rarely met with; while in malignant and other **visceral affections,** delirium, confusion, or stupor may characterize the picture in varying degrees. Here, confusion is rather the more common form of mental disturbance, and it is, as a rule, accompanied by painful and depressive hallucinations and delusions. A similar mental state may be met with in **pregnancy** or may ensue during the period of **lactation.** It is hardly necessary

to add to this category the active delirium, often mistaken for mania, which may arise during the **puerperium** or follow shortly after. Clearly, in every case of delirium, confusion, or stupor, the etiology of the affection should be diligently inquired into and as far as possible the underlying pathologic cause determined. That this may have a most important bearing upon the treatment, local or general, is self-evident. On the whole, however, the treatment must be based upon the general principles previously outlined.

MELANCHOLIA, MANIA, AND CIRCULAR INSANITY

The second group of mental diseases in the classification that I have advocated is made up of **melancholia, mania,** and **circular insanity.** Just as the members of the first group, delirium, confusion, and stupor, are closely related to one another, so are melancholia, mania, and circular insanity closely allied forms. Indeed, the view is now held by many authors—among whom I may enroll myself—that melancholia and mania are but different phases of one and the same disease. We have to deal with a degenerative affection, manifesting itself in two kindred though distinct and clinically opposite phases. The identity of the etiology of melancholia and mania; the great rôle played by heredity (estimated by Kraepelin at 80 per cent.); the fact that both affections occur especially in persons of the emotional and excitable, the poetic and artistic, temperament; that they both occur by preference in early adult life; that they both present similar prodromal factors; that each runs a course of gradual increase, maximum intensity, and final subsidence; that each presents in its course a phase which is the complement of the other; that in each the emotional state dominates the entire picture; that they both tend in their individual attacks to recovery; that each tends to recur; that opposite phases of melancholia and mania are found in the same individual; and, finally, that cases are met with in which the elements of both phases are present at the same time (the so-called 'mixed form' of Kraepelin);—can leave no doubt as to the close relation between the two disorders.

Inasmuch as our knowledge of these affections is almost exclu-

sively clinical, our treatment must necessarily be general and symptomatic. For this reason also, notwithstanding the close clinical relationship between melancholia and mania, their treatment is best considered separately.

Melancholia

Melancholia, as is well known, presents itself in a variety of forms; first, the **simple acute melancholia;** second, melancholia of mild intensity, **hypomelancholia;** third, **melancholia without delusions;** and, fourth, **melancholia with stupor. Melancholia agitata** does not merit separate consideration, at least not from the viewpoint of treatment; for the management of cases with prolonged agitation does not differ from that of ordinary acute melancholia with episodes of agitation. Melancholia of **irregular course** and **chronic melancholia** will be touched upon in the discussion of the treatment, so far as seems necessary.

In a large number of cases of melancholia, we are confronted at the outset by the question of **commitment to an asylum.** Quite commonly the surroundings of the patient are such as to preclude proper care at home. In such cases, if the symptoms be at all pronounced, commitment should be urgently recommended. Especially should the danger of suicide, and the necessity for the protection afforded by institution management, be clearly pointed out to the relatives. However, there is a very large group of cases in which the melancholia is either so mild in degree (hypomelancholia) or in which the mental faculties are so well preserved—the patient suffering neither from hallucinations nor from delusions (melancholia without delusions)—that commitment to an asylum is neither necessary nor justified. Such cases can be treated effectually by rest methods elsewhere. It is always incumbent, however, for the physician to see that the patient is supplied with a capable nurse or attendant and that other provision is taken to safeguard the patient against the possibility of suicide. While the tendency to self-destruction is not pronounced in all cases of melancholia, the physician should, as a matter of precaution, regard it as a possibility in every case, no matter how mild the melancholia may appear to be. We should

remember that even in apparently mild cases, the psychic pain from which the patient suffers may at any time become so accentuated, or the delusion of the unpardonable sin become so vivid and overwhelming, that suicide may unexpectedly be attempted. The further fact also, that patients every now and then make attempts upon the lives of those about them, as a mother upon her children, forms an additional reason why care should be taken. In cases of frank and typical acute melancholia, the question of commitment is often decided by the intensity of the symptoms and the surroundings of the patient, and the danger of self-destruction is thus averted. In the milder or extra-mural cases, it is best to consider the danger of suicide as always present; not that it is so in reality, but because we are unable to foretell in a given case when, or whether, the danger will or will not become actual and acute. In a very large number of the mild cases, the management of the patient is exceedingly simple and can be carried out with comparatively little trouble, provided the nurse is watchful and notifies the physician at once of any undue accentuation of symptoms. If episodes of increased intensity occur, the vigilance of those about the patient should of course be redoubled. Suicide in extra-mural cases is, on the whole, infrequent and readily preventable. It is not so much an actual, as a possible, danger; none the less it should be constantly guarded against.

The question of commitment or non-commitment having been determined, it becomes necessary to consider the question of management. To begin, the patient should be **isolated,** especially from the members of his family and from his immediate circle of friends. Much harm is done by the association of the patient with his relatives. Their mere presence is a constant reminder of his changed condition; their sympathy and solicitude accentuate his suffering and, as a rule, emphasize his delusions. The patient always fares best if he be isolated for a more or less prolonged period. Isolation does good; it rarely does harm, unless indeed it be unnecessarily prolonged. If it be continued, for instance, during the period of convalescence, the patient may feel that he is being neglected by his relatives, and this in turn may serve as a cause of depression.

In cases, too, of hypomelancholia, which usually run a very prolonged course, the patient not infrequently feels, if the isolation be of great duration, that he has been abandoned by those who ought to love him, and this may in turn serve as a potent agent of harm. There can be no question, however, that in all cases of melancholia, as in neurasthenia, isolation is of the utmost benefit. How long the isolation shall last, when and how frequently it shall be broken in upon, must depend entirely upon the judgment, the tact, the good sense, of the physician. Such isolation is necessarily attained for patients who are committed to an asylum. In other cases it is best brought about by the removal of the patient from his own home. A properly equipped private hospital, a 'rest house,' a farmhouse in the adjacent country, where the patient is within easy access of his physician, will equally secure the desired isolation.

As a matter of course, when the patient is treated outside of an asylum, he should be provided with a **trained nurse.** A mere attendant will not answer. The results achieved, it need not be stated, are far better when the patient is under the care of an intelligent and well-trained nurse, while his safety is more certain. In some extra-mural cases it is best to provide the patient with two nurses, so that he is never for an instant left alone. Later on, when convalescence is established, the vigilance may be relaxed and one nurse only will be needed. We should always remember that excess of precaution does no harm, while the lack of it may lead to the most unexpected and disastrous consequences.

Our patient having been properly placed, and supplied with a suitable nurse or nurses, treatment is to be instituted upon the following principles: In the first place, we should remember that the patient is not only in a condition of profound mental depression, usually with painful hallucinations and delusions, but also that he always presents, in addition, symptoms of profound nervous weakness. To these symptoms I have applied the term **neurasthenoid;** while they are like those of neurasthenia, they are not truly neurasthenic (see page 89). The face is apt to be pale and drawn; the hands and feet are cold, often livid, and sometimes moist. The patient is also more or less emaciated, having lost many pounds in

weight, sometimes as much as thirty or more. His pulse is often soft and feeble and the impulse of the heart weak. Nervously he is easily fatigued. Save when disturbed by periods of agitation, he is apt to remain seated quietly in his chair or lying still in his bed. He speaks but little and sometimes not at all. Exertion, mental or physical, as a rule fatigues him readily, and sometimes adds greatly to his distress, often bringing on episodes of agitation. Under these circumstances it need hardly be pointed out that **rest** is urgently indicated. It is perfectly true that **relative rest** in many cases answers the purpose well. Indeed, with agitated patients, it is often difficult to institute full rest, but there can be no doubt that in all cases in which **prolonged rest in bed** can be instituted, the suffering of the patient is mitigated and the course of the disease favorably influenced. Whenever it is possible, other things being equal, radical rest in bed should be carried out. This rest should always be of many weeks' duration, just as it is in the treatment of neurasthenia. Even in cases of melancholia in which the duration of the disease is of unusual length, say a year or more, the patient should from time to time be submitted to periods of rest, these periods alternating, according to circumstances, with other periods of open-air and out-of-door life. The periods of rest should be adapted so far as possible to the recurring waves of increased intensity of symptoms, which waves, experience teaches us, characterize these cases of prolonged and irregular course.

Let us suppose that in a given case—an extra-mural case—rest treatment has been decided upon. It is necessary first to give some attention to the **room** which the patient is to occupy. If the melancholia be pronounced, or if the symptoms be such as to give rise merely to the suspicion of suicidal attempts, the precaution should be taken not only to place the patient under the supervision of one or more nurses, but also to see that he does not have access to instruments with which injury might unexpectedly be inflicted. It is not necessary to point out that a penknife, a pair of scissors, the implements of a work-basket, nail-files, or similar objects should be excluded from the room. The windows also should be protected against any sudden impulse of the patient to use them as a means of self-destruction. It is an exceedingly

simple procedure to adjust screws in the frames of the windows in such a manner that the sashes cannot be lowered or raised sufficiently to permit of the egress of a human body. In other cases, an ordinary, strong wire screen, fastened in the window-frame, ostensibly for the purpose of excluding flies or mosquitos, answers an equally good purpose. It need hardly be added that these various precautions should be instituted without the knowledge of the patient and never in such a way as to suggest to his mind, even remotely, the fact that self-destruction is considered as a possibility.

The patient having been placed in bed, rest methods, similar to those instituted in the **full bed treatment** of neurasthenia (see page 48) should be instituted. It will soon be found, however, at least in the majority of cases, that certain modifications of method are necessary. A **sponge bath** should be given in bed, between blankets as usual, but the nurse will soon learn that the patient is averse to unnecessary handling; indeed, that he is frequently made irritable and nervous by such handling. Similar is it with **massage,** which is so efficacious in neurasthenia and hysteria. Patients with melancholia very frequently object, especially at first, to being rubbed. Rubbing that is too vigorous or too prolonged is often harmful in its immediate effects. Particularly is this true of cases with a tendency to agitation. However, in the larger number of cases, the patient sooner or later becomes accustomed, not only to the companionship of the nurse, but also to the daily bath, and little by little, especially if the nurse be tactful, to the massage. It is hardly necessary to point out that it is imperative that the massage should be given by the nurse and not by a stranger. The patient gradually learns to submit to a degree of handling and manipulation of all kinds at the hands of his nurse which would be out of all question at the hands of a stranger. A skilful nurse will usually be able sooner or later to establish rest methods—so far as absolute rest in bed, bathing, and massage are concerned—as thoroughly as in cases of simple neurasthenia. **Electricity** is, as a rule, inapplicable, especially during the height of the depression. It may, however, in most cases, be employed with advantage during the period of convalescence. In many cases, on the other hand, it can never be instituted at all.

In another respect the application of rest treatment in melancholia differs somewhat from that in neurasthenia. In melancholia there is, in the larger number of cases, not only a diminished appetite but actually disgust for food. Feeding should therefore be instituted with much tact and judgment, and here again much depends upon the nurse. In the larger number of cases, by tactful management, full feeding can sooner or later be brought about; the patient taking not only some solid food three times a day, but in addition large quantities of milk. It is frequently a good plan to begin with the administration of liquid food alone—especially milk; and only some time later to attempt the administration of solids. With many patients, when the dislike for food is very pronounced, we may be obliged to limit our efforts to the administration of milk or of milk and eggs for a prolonged period. In many cases there is not only a loss of appetite, but often the patient is delusional with regard to his food. He may believe that it is poisoned or that it is foul or putrescent, or he may have formed the deliberate purpose of destroying his life by abstaining from food altogether. Much depends upon the tact and the personality of the nurse under such circumstances. Not infrequently, when the patient has refused to take food in response to persistent urging, the simple expedient of placing the glass of milk within easy reach, at his bedside, sometimes results —after a while and if the patient ostensibly be left alone—in his drinking the milk.

In the milder or extra-mural cases it is not, as a rule, necessary to resort to **forcible feeding.** The patient often gets along for a time upon a surprisingly small amount of food without visible or marked decrease in his strength, especially if he be resting in bed. However, when it has become impossible to administer food for two days, or at most three days, in succession, and especially if the patient's strength has notably diminished, it is necessary to institute forcible feeding. Sometimes before resorting to this expedient, a new nurse—a woman in the case of a male patient—may be brought in to urge him to take food. Sometimes, indeed, the physician himself may be successful when the nurse fails. The patient should be gently spoken to. The necessity of food should be clearly and repeatedly pointed out; every tactful method of persuasion should be instituted. Finally the

patient should be told very plainly that unless he takes food willingly, he will be fed forcibly. Not infrequently, also, when the patient is in the presence of the actual preparations for forcible feeding, he will compromise by taking a certain amount of food. The victory thus gained, it need hardly be said, should be followed up closely. A patient who has obstinately refused to eat, will sometimes swallow mechanically if the food be placed in his mouth. Patients will not infrequently allow themselves to be fed in this way with a spoon. A proportion of cases, however, remains, in which forcible feeding becomes an absolute necessity. In such instances the feeding should be performed in the manner already described (see page 167). The quantity of food given at any one time and the frequency with which the feeding should be repeated will depend largely upon the patient. It is best at first to limit the feeding to twice a day. A mixture of milk and eggs, measuring as much as sixteen ounces, should be very slowly introduced into the stomach. If the patient tolerates this amount well and there is no vomiting or regurgitation, the quantity may gradually and very decidedly be increased. The feeding may be repeated, if it be well tolerated, three or even four times in the twenty-four hours. As a rule, however, the less frequent the feeding, the better. Forcible feeding may be a necessary procedure for many days and weeks—indeed for many months; and in some cases it has been carried out for a number of years.

As already stated, forcible feeding is but rarely necessary in extra-mural cases. In the latter, by tact and persuasion, quite a large amount of food can usually be administered during the twenty-four hours. We should always be careful, when full feeding has been instituted, to watch the evacuations, so as to observe whether the food is being well digested. If the food be not properly digested, it is wise, of course, to diminish the quantity that is given.

Among the **special symptoms** that require attention is the **insomnia** from which the patient suffers. Sometimes, but not frequently, simple expedients, such as induce sleep in neurasthenia, will induce sleep in melancholia; thus, a glass of hot milk at bed-time, or a warm sponge bath, given just before the sleeping hour. Elaborate baths are only exceptionally tolerated. Neither the drip-

sheet nor the wet pack can, as a rule, be employed. It is true that in some cases, especially in prolonged hypomelancholia, the wet pack affords a very valuable method of inducing sleep; in ordinary cases of melancholia, however, both the drip-sheet and the necessary manipulations of the wet pack distress and annoy the patient. Notwithstanding this, hypnotics should not be resorted to unless the insomnia is exceedingly grave and persistent. The patient is often able to get along with comparatively little sleep or a sleep that is badly broken. Often he is anxious for the administration of medicine, and under ordinary circumstances it is wisest to begin with a placebo, such as a capsule of starch. In mild cases this may satisfy the patient, but as a rule it fails to bring about sleep. Not infrequently, in spite of all our efforts, we are forced at times to make use of hypnotics, and then the rules already laid down should be followed, namely, that the mildest of the hypnotics should be used, that they should be used in the smallest dose consonant with securing some improvement in the sleep, and, finally, that they should never be continued for any length of time. A trial should first be made of hyoscin or of scopolamin (one two-hundredth to one one-hundredth grain) with paraldehyde (one to two drams). Frequently we are compelled to fall back upon trional and sulphonal, and it should be borne in mind that a combination of these drugs usually acts better than either alone. Ten or fifteen grains of trional with five or ten grains of sulphonal will usually give a very satisfactory night's sleep. In patients who are agitated and in whom sleep is induced with difficulty, a dose of paraldehyde may be given immediately after the trional and sulphonal so as to start the sleep, which is afterward prolonged by the trional and sulphonal. If it be necessary to administer hypnotics for a long time, it is well to vary the administration of trional and sulphonal with chloralamid. Sometimes scopolamin or hyoscin combined with chloralamid forms a very efficient substitute. Hedonal has not, in my experience, proved a sufficiently powerful hypnotic. The bromids and chloral should be avoided. Morphin is but rarely necessary to produce sleep, other drugs sufficing.

Another symptom that requires serious attention is the **suffering** of the patient. This in some cases may become intense in degree.

The psychic pain of melancholia, when of great severity, is probably the most frightful form of suffering to which the human organism is subject. The agony seems at times indescribable. No physical pain, not even tic doloureux, can be compared with it. When this symptom is pronounced and is not mitigated by the rest methods, the full feeding and other measures employed, recourse should from time to time be had to sedatives and pain-allaying remedies. As a matter of experience, it is found that quite frequently small doses of the bromids decidedly lessen the patient's sufferings. In other cases the bromids are powerless or the dose required is excessive. Furthermore the prolonged administration of the bromids, even in small doses, is liable to accentuate the physical depression which the patient already presents. A far better plan is that of using small doses of morphin or of some preparation of opium. It is not infrequently found that an exceedingly small dose of morphin, such as enters into a cough mixture, a thirty-second or a sixteenth of a grain, produces the most decided amelioration. In other cases, of course, larger doses are required. An important point, in my experience, is the superiority of small doses at short intervals over large doses at long intervals. Thus, it is better to administer, say a thirty-second of a grain of morphin six times daily, than a sixteenth of a grain three times daily. The minute doses are well tolerated and produce an even sedation extending over the entire day. In cases in which small doses of morphin do not quickly produce decided betterment, it is well to substitute a liquid preparation of opium; for example, the deodorized tincture. The quantity administered should be the minimum that will give relief. It is a remarkable fact, furthermore, and one of considerable practical importance, that opium, as well as morphin, is extremely well borne by melancholic patients. Even when decided doses are necessary, the drug rarely induces nausea and does not seem to increase the constipation; certainly the digestive tract is much less disturbed by opium in cases of melancholia than under normal conditions. It is no less remarkable that during the period of convalescence the opium can be withdrawn rapidly and easily. The patient does not appear to miss it, and there is practically no danger whatever of establishing a drug-habit; unless, indeed, the drug has been given recklessly and unnecessarily. Never-

theless opium is not to be resorted to as a routine measure; it should be reserved for cases in which the suffering is extreme and evident. Under such circumstances, however, it is merely humane to use this potent means of relief, and the drug should be given in sufficient dose to be effective. Not infrequently codein answers every purpose, a half grain or a grain, three or four times daily, decidedly mitigating the patient's suffering. As a matter of course, opiates should not be given continuously for prolonged periods, but should be withdrawn from time to time.

Ordinary tonics may be used from time to time in the treatment of melancholia, though they do not markedly influence its course. The temptation to prescribe strychnin in all asthenic states leads also to its occasional use in melancholia. However, there are many patients by whom strychnin is badly borne and in whom it obviously increases the nervous tension already a cause of suffering. There are times, of course, when the patient is steadily losing ground —especially if he be growing rapidly weaker or if there be evident signs of cardiac failure—when it may be wise to use the strychnin in decided doses for the moment. It should be remembered, however, that strychnin used merely as a general tonic in the course of melancholia is of little value. Iron may be given from time to time, as may also Fowler's solution. These remedies are at most, however, adjuvants to the treatment and of relatively small importance. The bitter tonics exert little influence in exciting an appetite during the height of the disease, and they are, as a rule, taken unwillingly. During the period of convalescence they may prove of value.

Cases of melancholia rarely pursue an even course. The period of maximum intensity of the disease, as well as the period of convalescence, is interrupted now and then by intervals in which the symptoms are less and then again more pronounced. Such slight periods of improvement and again of accentuation of symptoms will naturally also be observed in the patient who is being treated by full rest methods. A patient who is much improved one week may not be quite so well the next or, it may be, for a number of weeks to follow. Notwithstanding these fluctuations, the measures instituted should be resolutely and rigidly persisted in.

Even when the patient is under rigid rest treatment, it is a wise plan to allow him to **sit up** or exercise about the room for a few minutes twice daily. Now and then, when the rest is absolute and continuous, the patient's muscles become exceedingly relaxed, and when occasion requires that he should leave his bed, increased physical weakness may be very evident. At times this weakness is extreme. Usually such a degree of relaxation is prevented by the slight amount of exercise required in getting out of bed to move the bowels and the exercise required in sitting up while the bed is being made. In many cases, however, slight waves of exaggerated physical weakness, followed again by a return of physical tone, occur in spite of any precaution adopted in the treatment; of these, no adequate explanation can be given.

Rest methods are in mild cases of melancholia sometimes followed by brilliant results. Occasionally a treatment, extending over six or eight weeks, is followed by a brilliant recovery. Such an issue is not, however, common. Ordinarily, a much longer period, equivalent to that necessary in a profound case of neurasthenia, is required; namely, rest methods persisted in for three or four months. It is not necessary to add that the more rapid results are, as a rule, obtained in the melancholias of early life, while those occurring in middle age usually require a much longer period of treatment. However, that rest treatment abridges the duration of many cases of melancholia, there can be no doubt. It is not, of course, so successful as in cases of neurasthenia, but even when it does not seem to shorten the duration of the disease, it greatly ameliorates the symptoms. Suffering, nervousness, and insomnia are usually markedly lessened. Furthermore, patients who would otherwise die of exhaustion, and patients whose symptoms are unduly prolonged and tend to become chronic, are beyond all doubt saved by elaborate plans of treatment. Finally, in cases that are very prolonged—*i. e.*, cases that last two or even more years—the institution of rest methods for varying periods of time repeatedly during the long course of the disease, is of undoubted value and certainly favors recovery—if recovery is to occur at all.

When in cases of melancholia that have been submitted to full

rest treatment **convalescence** becomes established, the patient should, as in neurasthenia, be permitted to resume his relations with his friends and the outside world only very gradually. We should remember that the period of convalescence is liable to interruption by recurrence, and that these recurrences often depend directly upon undue strain and unnecessary fatigue.

Little by little, as the case progresses, the patient should be permitted to get out of bed; little by little passive movements should be added to the massage, and finally movements with resistance may be instituted. The time out of bed should gradually be increased, and very soon the patient should be permitted to exercise for short periods in the open air.

The management of the patient, subsequent to a course of rest treatment, is of even greater importance in melancholia than in neurasthenia. If possible, the patient should be sent to the seashore or to some resort in the country or in the mountains, as circumstances may dictate. Here healthful outdoor living should be followed up for a number of weeks, and, if possible, for a number of months. Vigorous exercise should of course be the rule. Eventually the return of the patient to his occupation is to be attempted. He should be cautioned against over-fatigue and against subjecting himself to any unusual strain. A simple hygienic life is imperative, and stimulants —tea, coffee, alcohol, and tobacco—are to be avoided.

It need not be pointed out that during the entire period in which a case of melancholia is under treatment both the physician and the nurse should adopt a demeanor and speech which regard the recovery of the patient as an admitted fact. The patient will often speak deprecatingly when his recovery is alluded to; often he denies recovery as being within the range of possibility, and declares that neither his doctor nor his nurse understands his case, otherwise they would not speak of his getting well. The constant suggestion of improvement and of returning health, and of the uselessness of worrying and dwelling upon the past or some imaginary sin, does not have much effect upon the patient during the height of the disease. During the period of convalescence, however, such suggestions are not only tolerated by the patient, but, after a while, are greedily listened to. Very soon the possibility of recovery is admitted and the

patient begins to ask as to when he will be well. The fact that this question is asked at all, is an augury of recovery. There can be no doubt that during the period of convalescence suggestions of returning health have a stimulating effect.

It seems wise to add a word with regard to the employment of **thyroid extract** in the treatment of cases of melancholia of prolonged course. In a number of instances it appears to act as a cerebral stimulant. However, its action is inconstant, and if given in decided doses, it will add to the nervousness from which the patient is already suffering. It need hardly be stated that with agitated patients it should not be used at all. I use it only occasionally in very prolonged cases and for brief periods, during waves of increased depression. On the whole, its action is disappointing.

Mania

Mania does not present so great a variety of forms as does melancholia. The variations depend rather upon the intensity and duration of the symptoms than upon their character. So far as we are concerned, the question resolves itself into the management of **typical acute mania,** of **hypomania,** and of **chronic mania.**

In cases of typical acute mania, the question of **commitment** is decided for us by the case itself. The symptoms are frequently so pronounced, the patient is so violent and noisy, so difficult of control or restraint, that the necessity for commitment is obvious not only to the physician, but also to the friends and relatives. However, when the patient is merely in a condition of mild maniacal excitement—so-called hypomania—commitment may be neither indicated nor justified. Indeed, under such circumstances, commitment is frequently resisted by the relatives. The lucidity of the patient is, as a rule, perfectly preserved, and it is only at times, when the excitement attains an unusual intensity, that commitment becomes necessary. Many cases of hypomania can be treated during the entire course of the disease outside of the asylum.

Treatment.—It is unnecessary, after what has been said relative to the treatment of melancholia, to point out here the necessities and advantages of **isolation.** In typical acute mania isolation is

an imperative necessity, and is, of course, insured by commitment. In hypomania, it may be attained by the removal of the patient from home, either to a private hospital or to a house in the suburbs or in the country. The special plan adopted will depend entirely upon each individual case and all the circumstances surrounding it.

The treatment of mania consists essentially in the application of physiologic methods. So far as practicable, **rest** should be a prominent feature. In the milder cases of mania, such as permit of extramural treatment,—*e. g.*, hypomania,—full rest treatment can usually be instituted and carried out with great success. The patient can frequently be prevailed upon to go to bed at the outset, and by a little tactful management, together with the judicious and occasional use of sedatives, the rest in bed can be continued for a sufficiently prolonged period. The details do not differ from those adopted in neurasthenia. The patient should rest continuously in bed, should leave the bed only long enough to void the urine and empty the bowels, should be **bathed** in bed between blankets, and should receive **massage** daily. Care should, of course, be used not to add to the patient's excitement by undue handling; for this reason, massage may be for a time inapplicable, though frequently the patient submits quietly to this part of the treatment. **Electricity,** however, can rarely be employed, because of the excitable condition of the patient, save now and then, during the period of convalescence. Because of the duration of hypomania, the **period of treatment** necessary is usually quite prolonged; it frequently extends over three or four months or more.

At the outset it is wise, as a rule, to give an efficient dose of calomel, followed by a saline, so as to empty the intestinal tract. The purge itself usually acts as a sedative and prepares the patient for a subsequent course of full feeding. The **diet** should be systematic, practically such as is employed in ordinary neurasthenic cases. Other things equal, milk should be given with meals, between meals, and at bedtime, and in as large a quantity as the patient can take and digest. Full feeding is absolutely essential.

In cases treated by rest methods outside of the asylum, a well-trained **nurse** is, of course, indispensable, and if the symptoms be at

all pronounced, two will be required, so that the patient shall never be left alone. Precautions similar to those instituted in cases of melancholia should be taken as regards the room which the patient is to occupy. The windows should be secured in the manner already described, while all instruments or utensils, by means of which the patient could inflict injury upon himself or others should be removed from the room. In cases of hypomania the danger, either to the patient or to those about him, is exceedingly slight. It should, however, always be guarded against.

In all cases of mania, whether treated at home or in the asylum, it is necessary to allay as far as possible the **excitement and insomnia** from which the patient is suffering. Whenever practicable, we should endeavor to produce quiet by some form of **bathing,** —warm sponge bathing between blankets in bed, the warm pack, or the prolonged immersion bath carried out in the manner already detailed in considering the treatment of delirium (see page 184). Usually in ordinary acute mania, it is wisest to bring the patient partly under the influence of some sedative or hypnotic before attempting any radical procedure of hydrotherapy. In cases of marked severity there is resistance to handling of all kinds, and it is only after the administration of sedatives that baths can be applied without the serious risk of exhausting the patient by useless struggling. Trional, or, better still, trional with sulphonal (twenty grains of the former to ten of the latter), may be administered; or one one-hundredth of a grain of hyoscin hydrobromate or of scopolamin may be employed, or such other of the hypnotics used as the circumstances of the case seem to justify. The medicines are best administered in liquid form. Milk is usually an acceptable vehicle. Hypodermics should for obvious reasons be avoided. Morphin should rarely be resorted to. The bromids also should be reserved for temporary administration only, and the like is true of chloral. The use of trional and sulphonal, in the manner already indicated, usually answers every purpose. The patient becomes relatively quiet and frequently sleeps, or at least permits bathing and other necessary manipulations.

Occasionally the excitement is so extreme, the struggling so incessant, and the danger of injury so great, that the patient must be

held continuously by his attendants until quiet has been induced, either by medication or possibly by the application of the wet pack. Sometimes mechanical **restraint** becomes urgently necessary, as, for example, in a patient who has already suffered some serious surgical injury. Restraint can be accomplished quite readily by means of ordinary bed-sheets. Thus, a sheet, loosely rolled, is passed back of the patient's neck and under both armpits. Each end is then firmly secured to either side of the bed. In a similar manner, the legs may be fastened by a sheet which encircles separately each one of the ankles and is then fastened to either side of the bed. If it be necessary to restrain the patient entirely, he can be completely rolled in a sheet, the arms being flexed over his chest, the legs extended; the ends of the sheet are then firmly secured by means of safety-pins. Much prejudice exists against the use of the canvas shirt, and as a rule it can be entirely dispensed with; however, if properly made, there can be no objection to it. It is needless to say that physical restraint in a given case should be removed as soon as possible, and I need not here repeat the caution that it is none the less necessary to watch closely a patient to whom physical restraint has been applied. He should not for a moment be left without the watchful care of his attendant.

Because of the duration of mania, **caution** is to be exercised in regard to the **prolonged use of drugs.** They are to be regarded largely as emergency remedies. So far as practicable, they should be varied from time to time. The efficiency of paraldehyde in overcoming sudden and intense excitement should not be forgotten. Its unpleasant taste, as has already been pointed out, may, however, prove a serious obstacle to its use. Whisky offers a convenient vehicle for its administration, and one that is often acceptable to the patient. In cases of great excitement, the dose should not be less than two drams. It is frequently a good plan to give trional and sulphonal first, and if sleep does not follow after a reasonable interval, to use paraldehyde. Sleep is induced promptly and is subsequently prolonged by the action of the trional and sulphonal.

Very soon the suitable dose of the various hypnotics required in a given case is learned, and no difficulty, as a rule, is experienced in inducing a certain amount of sleep and relative quiet, especially

if bathing be also in a measure employed. Very frequently small doses of trional and sulphonal answer every purpose.

During the period of **convalescence,** exercise should be added to the rest methods. As far as possible this exercise should take place for short periods of time in the open air. Tonics—iron, strychnin, arsenic, and the various bitters—may also be employed as indicated. After treatment has been completed, a considerable interval of time should elapse before the patient returns to his ordinary occupation or subjects himself to any strain of consequence. Great care should be exercised in this respect, as recurrences are not infrequently brought on by injudicious waste of the patient's nervous strength. The remarks made in regard to the management of cases of neurasthenia in the period of convalescence (see page 66) are equally applicable here.

Circular Insanity

Circular insanity consists in an alternation of phases of depression and exaltation, the phases being in themselves indistinguishable from separate attacks of mania or melancholia. The affection therefore does not require special consideration here; the treatment is that of melancholia, on the one hand, and of mania on the other. It is important, however, to bear in mind that in a person who has once passed through an attack of circular insanity, there is a pronounced tendency to recurrence. The patient should therefore, other things equal, be under more or less supervision during the intervals of his lucidity. These intervals are exceedingly variable in duration, lasting from a few weeks or months to several years. It is hardly necessary to say that during their continuance the life of the patient should be regulated by a strict adherence to simple hygienic and physiologic methods of living. It is not improbable that by such means, the intervals of lucidity can be prolonged. At any rate, the patient's general level of health and efficiency is undoubtedly kept higher under such conditions.

PARANOIA

The management of the various forms of paranoia—systematized delusional insanity—is of the utmost importance, although the results

of treatment, so far as the patient is concerned, are on the whole unsatisfactory. Paranoia is essentially a progressive degenerative disease of many years' duration, and one which is only occasionally influenced by treatment. The important practical point which the physician must face in every case is the question of **commitment.** The delusional lunatic is so often dangerous that, the diagnosis having been established, it is wisest, other things equal, to urge restraint. In many cases the necessity for commitment becomes obvious to relatives and physician alike by the assaults or attempts at assaults which the patient makes. In other cases, again, the patient's own safety demands the protection of the asylum. This is equally true whether the patient be in the persecutory or the expansive stage of the disease. The fact that patients not infrequently practise self-mutilation, and occasionally commit self-destruction, offers another reason why commitment should be insisted upon. On the other hand, it is well known that some cases of paranoia are harmless or comparatively so. Not all cases, therefore, require commitment, but the fact remains that the larger number not only demand restraint, but demand it imperatively. Experience shows that not infrequently the mild, so-called 'non-asylum,' cases develop dangerous symptoms, and in every case the relatives should be clearly informed as to the nature of the patient's affection. It should also be pointed out to them that the disease becomes more pronounced with time, and that some measure of supervision should always be exercised.

It is necessary, finally, to call attention to one important point in regard to the commitment of cases of paranoia, and that is that in doubtful cases the full concurrence of the various relatives should be procured before commitment is ventured upon. We should remember that remission of symptoms sometimes ensues under the quiet, the sleep, the good food, and the general physiologic life of the asylum. Under such circumstances the patient may subsequently declare that he has never been insane, that he has been unjustly committed, and may bring legal proceedings against the physicians who signed his commitment papers. While the danger of a successful prosecution is slight, physicians are not infrequently put to great annoyance and personal inconvenience by paranoiacs in whom, in

spite of well-established lunacy, considerable mental power has been preserved. The patient is often shrewd enough to deny or to conceal his delusions, or when confronted by the undoubted evidence of their existence, to attempt some plausible explanation of them.

The **medical treatment** of cases of paranoia consists, of course, in the application of the general hygienic and physiologic measures so frequently discussed in this volume. Full feeding, bathing, exercise in the open air, massage, and rest are to be employed. Sleep is to be insured by exercise, by hydrotherapy, or by the judicious use of medicines. Digestion and other functions are to be regulated, and tonics employed, as indicated.

Mental exercise is no less important than physical, and whenever the nature of the case permits, the patient should be interested in some **occupation.** Quite a number of patients can be made busy in one way or another. Women can be employed in household duties, sewing, or fancy work. So far as possible, the occupation should be varied and should include some work in the open air, such as gardening. Men especially can engage in out-of-door pursuits, such as farm-work and trucking. In a large number of asylums quite a percentage of patients can be occupied in this and similar ways. Rational forms of amusement should also be encouraged, *e. g.*, music and in-door games, such as billiards and pool. The extent to which these measures can be carried, if instituted at all, depends of course upon the fitness of each individual case. Other things equal, work proves most beneficial.

THE NEURASTHENIC INSANITIES

The neurasthenic insanities form a group of affections having as their basis both neurasthenia and neuropathy. That both of these factors are present in every case can, I believe, be demonstrated. When we take up the consideration of the psychic phenomena of neurasthenia, we are impressed at the very outset by the symptom of ready exhaustion—of marked diminution in the capacity for sustained intellectual effort. As is well known, nervous exhaustion may supervene in individuals who are otherwise perfectly normal. It may result from unphysiologic living, overwork, overstrain, and other factors productive of chronic exhaustion. It is thus an affec-

tion to which every one is liable, those of normal, as well as those of pathologic, heredity. The symptoms of neurasthenia, as ordinarily met with, are those of chronic fatigue, and I have upon various occasions applied to it the term of the **fatigue neurosis** (see chapter II). The attempt to do mental work brings on, more or less rapidly, the signs of fatigue. Soon there is difficulty in sustaining and concentrating the attention, and at the same time there is a marked diminution in the spontaneity of thought. When the condition is pronounced and confirmed, the patient becomes irritable, nervous, lacks confidence in himself, betrays indecision regarding trivial matters, and is often emotional to an unusual degree. His equilibrium is readily disturbed; a play at the theater or a newspaper account of a murder may move him to tears, or a trivial incident may provoke him to unusual annoyance or anger. In other words, added to the symptom of ready exhaustion we have that of deficient inhibition. His lack of confidence in himself may grow into a feeling of timidity; a man forceful and aggressive loses the readiness with which he arrives at decisions, loses in will-power, and may even become chronically afraid. Weakness, indecision, and fear are closely associated, and it is not surprising that one in a condition of chronic exhaustion should become morbidly afraid. How fear manifests itself in neurasthenia, it is hardly necessary to point out in detail. There may be present a vague generalized sense of being afraid, or there may occur isolated, spontaneous attacks of generalized fear—a fear accompanied by marked outward physical signs. In such attacks the face becomes pale, the heart palpitates, the pulse is small and rapid, the respiration hurried, there may be a cold sweat upon the body, and the patient may sink from weakness upon a chair or upon the ground. Indeed, if an attack be intense, there may even be relaxation of the sphincters. In other cases the fear, instead of retaining a general character, assumes a special form. If, in addition to being neurasthenic, the patient be also neuropathic,—*i. e.*, if there be in him the elements of nervous degeneration, hereditary, congenital, or acquired,—some pathologic association may be formed in his mind, so that the emotion of fear becomes linked with certain relations to the environment. This to my mind is the most probable explanation of the origin of the various **phobias**—agoraphobia,

claustrophobia, and the like. For their establishment, two factors appear to be necessary—neurasthenia and neuropathy. Persons otherwise normal who acquire neurasthenia do not acquire the special fears.

A similar explanation applies also to the origin of *folie du doute.* The madness of doubt is in reality the insanity of indecision, and I believe it to be a neuropathic exaggeration, so to speak, of the indecision which is normally seen in ordinary neurasthenics. That profound neuropathic elements, hereditary or acquired, are necessary for its formation there can, I think, be no doubt. To me, the term **insanity of indecision** appears to be better than '*folie du doute*' or 'obsession of indecision,' and it is the one which I am in the habit of employing.

A somewhat similar explanation may be applied to so-called 'insanity with irresistible impulse.' That the inhibition of the neurasthenic is deficient, we have already seen, and that this defect should manifest itself in various bizarre and erratic forms in persons who are also of neuropathic organization, is not surprising. The normal brain is constantly eliminating impulses which are as constantly restrained or diverted into special channels. In the neuropathic neurasthenic, these impulses not only cease to be restrained, but manifest themselves as pathologic associations of movement in relation to the environment. To my mind, the term **insanity from deficient inhibition** is better than 'obsession,' '*Zwangsvorstellung*,' 'imperative idea,' or 'insanity with irresistible impulse.' The pathologic association that gives birth to the impulse is formed in the same manner as are numerous other, often irrelevant, associations in the normal mind; but in the latter such associations are repressed or inhibited and give no outward manifestation of their existence, while in the neurasthenic-neuropathic subject, they are given motor expression as rapidly as they are formed.

The psychic symptoms observed in the simple neurasthenia of non-neuropathic individuals, suggest also an explanation of so-called 'aboulic insanity,' or, as I prefer to call it, **insanity from deficient will.** The condition is closely allied to the insanity of indecision and is characterized by the inability of the patient to perform some special act or acts which are, as a rule, simple in themselves, and

which are habitually performed by normal persons without hesitation and even subconsciously. Thus, there may be psychic inability to rise from a chair, to walk forward, to walk in a given direction, to ascend a certain stairway, or to perform some other act, equally simple, but concerning which some pathologic association has been formed.

The foregoing considerations, while they give a full value to the factor of neuropathy, furnish us an important indication of **treatment,** because of the underlying neurasthenia. Cases of neurasthenic insanity are to be treated vigorously by physiologic methods. In given cases, **full rest treatment** is to be employed, and everything possible is to be done to force up the nutrition and the general health of the patient. While this is being done, it is necessary, of course, that the patient should have assigned to him a nurse who is not only experienced in rest methods, but is possessed of intelligence and of sufficient force to be able to influence the patient. The nurse should tactfully endeavor to break up the absurd associations upon which special fears or other obsessions depend; thus, she should combat, when present, the tendency of the patient to count or to be dominated by certain numbers; she should oppose indecision by a persistent method of retraining; and in cases of deficient will, the will of the patient should be reinforced by that of the nurse.

It is almost unnecessary to add that after a course of treatment by rest, an elaborate method of **physical exercise** and **mental training** should be instituted, which should extend over many months. In young persons and in comparatively recent cases, such a course of treatment is often followed by gratifying results. In older patients, in whom the fears or obsessions have been long established and in whom the neuropathic factor is dominant, treatment is of little avail, even when carried out elaborately. This fact should not, however, discourage us from making the attempt, especially in young individuals in whom there is marked impairment of the general health.

DEMENTIA

A detailed discussion of the treatment of simple demented states is unnecessary. In the management of dementia, as it presents

itself in the simple and uncomplicated senile form, simple hygienic measures alone are applicable. These should include especially **rest** and **full feeding.** A systematic treatment by rest in bed is, however, not practicable, nor can massage, so valuable in asthenic states, be employed save exceptionally and in a limited degree. Full feeding, careful attention to the digestive tract, tonic medication, occasional medicines to induce sleep, cleanliness of the person, and general supervision and care are the measures to be followed. The necessity for care in the feeding of advanced cases of dementia, in order to prevent food from entering the larynx, and the methods of prevention and treatment of bed-sores, have been discussed (see pages 169 and 180) and need not here be dwelt upon.

PARESIS

With a single exception, organic diseases of the brain and cord are rarely accompanied by mental disturbances, and if the latter do make their appearance, they generally present the symptoms of a gross organic dementia. The exception is paresis. In paresis we have a wasting of the brain, closely allied to the degeneration of the nerves and cord in locomotor ataxia. Paresis is neither more nor less than **tabes of the brain.** Its management must necessarily be conducted upon general principles. Because, however, of the undoubted rôle which syphilis plays in the etiology of paresis, in the great majority of cases, the question of specific medication confronts us as soon as the diagnosis is made. There can be no doubt that in a given number of cases the thorough administration of mercury and iodids is for a time at least followed by benefit. Indeed, it is advisable to institute in every case which is still in the early stage of the disease, a thorough course of mercurial inunctions for a period of several weeks, and then to follow this up with the free administration of the iodids. Both the mercurial and the iodids should be pushed vigorously, but should not be persisted in for too long a period lest harm be done. Inasmuch as the lesion of paresis is not syphilitic or gummatous, these remedies probably do good by stimulating absorption and for a time clearing up the perivascular and periganglionic lymph-spaces. Good effects are, as a rule, observed

only in relatively early cases; when the disease is advanced and the paretic is in the well-developed second stage of the disease, mercury and iodids undoubtedly do harm, inasmuch as they tend to depress still further the vitality of the patient.

If the patient comes under the care of the physician during the initial period of the disease, he should at once be withdrawn from his ordinary occupation and surroundings. All work, physical and mental, should be prohibited absolutely. All sources of worry, annoyance, care, and excitement should be avoided. Unfortunately, and especially with men, a radical plan of treatment cannot usually be carried out. Not infrequently, however, remissions more or less prolonged can be brought about by a properly directed plan of treatment. The remissions so frequently seen in cases committed to the asylums, are due to the rest and the quiet, the regular feeding, and the monotony of institution life.

Special symptoms may require attention from time to time. Among these is the insomnia from which the patient now and then suffers. This can be combated by warm sponge bathing before retiring, by hot foot-baths, or by brief immersion of the entire body in a warm bath. Small doses of hyoscin or scopolamin, trional, or paraldehyde may also be administered. Undue excitement is to be combated in a similar manner.

General physiologic measures, of course, should be instituted in every case. Full feeding, rest, exercise, massage, and tonics should variously be employed. So far as practicable, ordinary rest methods should be utilized. Every now and then a full course of bed treatment, carried out as in neurasthenia (see page 48), is followed by decided improvement, though this improvement is never more than temporary. It occasionally lasts, however, for many months, and even for a year or more. Although the ultimate outcome of paresis is uniformly unfavorable, gratifying remissions and prolongation of life frequently reward the efforts of the physician.

THE INSANITIES OF ADOLESCENCE

The insanities of adolescence—**hebephrenia, katatonia, and dementia paranoides**—are worthy of a special word. In their

treatment, as in the other forms of mental disease, general principles are to be applied. Physiologic measures, **rest,**—at times complete, at times partial,—**full feeding, exercise,** and **massage** are to be variously employed. There can be no doubt that in the milder and non-asylum cases, the careful and persistent application of these measures, together with a general supporting treatment, is followed by an arrest of the progress of the disease, and at times indeed by a complete recovery. Now and then, though not often, brilliant results are achieved even in cases of marked severity. I am convinced that the percentage of recoveries is larger in dementia præcox than an observation based purely upon asylum experience would indicate.

Because of the long duration of the disease, treatment outside of an asylum is attended by very considerable expense, inasmuch as the services of a trained nurse or an attendant are necessary. Indeed, sometimes two attendants are required. The various special indications—excitement, insomnia, depression, and weakness—are to be combated as they arise. In every way the general health of the patient is to be conserved, his functions maintained, and his symptoms controlled. The relatives should always be given to understand that the disease affords an unfavorable prognosis in the majority of cases, that there is, however, a possibility either of arresting the disease, or of a more or less complete recovery. In this connection it is well to bear in mind that katatonia affords, on the whole, a more favorable prognosis than simple hebephrenia, and that hebephrenia affords a more favorable prognosis than dementia paranoides; dementia paranoides presenting a prognosis which is almost as unfavorable as that of fully developed paranoia.

THE INSANITIES OF INTOXICATION AND THE DRUG HABITS

A discussion of the treatment of mental diseases would be incomplete without a consideration of the treatment of the conditions resulting from the abuse of **stimulants** and **drugs.** Manifold disturbances of function are here met with, varying greatly in degree. Frequently there is mere general nervous weakness and relatively slight functional impairment; at other times actual insanity is present.

The first group of cases presents symptoms resembling neurasthenia, but which are properly termed **neurasthenoid.** The second group of cases presents symptoms of **mental derangement** more or less clearly expressed. Numerous instances are of course found, presenting intermediate conditions between these two extremes.

Drug habits have their origin in a large number of cases in an underlying neuropathic constitution. Persons do not ordinarily acquire alcoholism, for instance, from the use to which alcohol is put for social or medical purposes. This may be the apparent origin of some cases, while in many patients a drug habit can be traced to the first administration of a drug by a physician; but it is nevertheless true that in a far greater number of instances the drug habit exists not because of these incidental factors, but because the nervous system of the patient is of itself pathologic. The close relation, observed in so many family histories, of alcoholism, tuberculosis, and insanity can have but one significance; namely, an enfeebled organization with diminished powers of resistance. Frequently the neuropathic condition does not assume a definite clinical form, the patient merely presenting a tendency to neurasthenic breakdown, to general nervousness or hypochondria. In other cases the history suggests very strongly recurring waves of depression, analogous to those which are observed in a frankly developed melancholia.

A brief consideration of the subject will convince us that the various stimulants and drugs have an effect upon the nervous system which is intrinsically the same. The clinical picture presented of course varies in its details according to the special poison which has been at work. Many poisons—for in the sense in which we are discussing them all of the stimulants and drugs are poisons—act upon the nervous system primarily as stimulants and secondarily as depressants; while others act as depressants and destroyers of function from the very beginning. **Alcohol** may in a sense be taken as the type of the poisons under consideration, and it will serve our purpose best to consider its action briefly.

In an ordinary attack of **alcoholic intoxication,** there is, at first, an increase in the ease with which ideas are eliminated; speech and memory are stimulated; the individual is talkative; there is a tendency to reminiscences, to jests, to rhymes, to puns. At the same

time there is noticeable an increased difficulty of apprehension and comprehension and an undoubted diminution of inhibition or self-control. There is an increased evolution of impulses of various kinds, sudden and unrestrained. Later, there is a slowing of mental action and the difficulty of apprehension is increased. After a while the individual is no longer able to understand what is said; judgment is gone, language becomes exaggerated, boastful, profane, or maudlin, and finally ends in a mere jargon. The attack terminates in unconsciousness and stupor. While alcohol apparently acts as a stimulant in the beginning, it is doubtful whether it does not from the very first retard rather than facilitate intellectual functions. Every brain-worker will, I believe, admit that even small doses of alcohol will increase decidedly the difficulty of intellectual labor.

The picture presented is confirmed when we turn our attention to the symptoms presented by **chronic alcoholism.** Here the individual presents undoubted, continued, and persistent diminution of the ability to work. Especially is it noticeable that he has difficulty in taking up new subjects. His intellectual life is contracted. It is difficult to deflect his mental processes from their accustomed channels into new ones. He apprehends and he acquires with difficulty and he forgets with great readiness. Judgment is dulled and impaired. If the condition progresses, the mental impairment becomes more pronounced and tends to permanence. Symptoms of well-marked dementia make their appearance. There is loss of the sense of the proprieties; parental and filial love and the sense of shame become obtunded. It need not be pointed out that such a patient fails to realize his own condition, that he resents the accusation that he is drinking to excess, and, indeed, may sooner or later develop the idea that he is being injured and oppressed by those about him. Emotionally he is irritable, he is restless, he is unreliable in statement. In addition to these nervous phenomena, he presents various physical signs; among them are chronic gastric catarrh, morning nausea, headache, dizziness, tremor of the tongue and hands, and weakness of the extremities. Depending upon personal peculiarities or upon the long continuance of the alcoholic abuse, changes may become evident in the peripheral nerves; indeed, these may become pronounced before dementia is decided,

and the patient then presents the all too common picture of alcoholic multiple neuritis. That epilepsy may develop, that optic atrophy may occur, is also well known, and need not be here dwelt upon. The foregoing picture is not invariable. In many cases of chronic alcoholism, there is present merely a mild obtusion of the mental faculties; the patients have not actually crossed the borderline into insanity. While any case may eventuate in insanity, there is nevertheless a broad line of distinction between chronic alcoholism, as it is ordinarily met with, and alcoholic dementia. Nevertheless that the action of alcohol is throughout that of a destructive agent must, I think, be admitted.

When we **analyze** the mental affections that result from the abuse of alcohol, we find that they readily separate themselves into, first, alcoholic **delirium,** so-called delirium tremens; second, alcoholic **confusion,** so-called alcoholic confusional insanity; and, third, alcoholic **stuporous insanity** or alcoholic dementia.

Alcoholic delirium closely resembles delirium from other causes. It is characterized by active and numerous fantastic hallucinations, among which visual hallucinations predominate. Illusions are present; consciousness is obscured; the patient is no longer in touch with his surroundings; mental confusion, pronounced and active, completes the picture. As in delirium from other causes, the patient sleeps little or none; the nutrition fails rapidly; the temperature is generally normal, though at times there is fever. As in other deliria, the reflex excitability is increased. Tremor of the tongue and fingers is present, epileptiform convulsions may occur. The duration is usually short, the delirium continuing from one or two days to one or two weeks. In favorable cases, the symptoms gradually subside. Recovery may ensue after a sound sleep, after the taking of food, or after general quiet has been brought about. On the other hand, the patient's mental faculties may become more and more impaired, he may gradually become profoundly unconscious and may die of exhaustion, of renal complications, of enfeebled or fatty heart, or, it may be, of pneumonia.

Instead of an acute alcoholic delirium supervening in a patient, there may develop a condition of more or less persistent **confusion.** Especially is this result apt to ensue when a chronic alcoholic increases

his potations beyond their usual amount. Alcoholic confusion is characterized by the same symptoms as characterize confusion dependent upon other causes. Hallucinations and delusions, unsystematized in character, are again present. Sleep also is disturbed. Auditory hallucinations are numerous and pronounced. Visual hallucinations, on the other hand, are not so prominent in alcoholic confusion as in alcoholic delirium. Alcoholic confusion, like confusion due to other causes, runs, as a rule, a prolonged course—many weeks or months.

Lastly, the patient may develop **alcoholic dementia.** In this dementia the patient may become stuporous or he may present symptoms vaguely suggesting paresis, such cases being spoken of as alcoholic paresis. Other cases, again, present systematized delusions and very closely resemble paranoia. It is highly probable, when the picture of paranoia is closely simulated, that we have to deal with a patient who is a paranoiac at the same time that he is a sufferer from alcoholism. It is very probable also that alcohol may in a neuropathic subject of bad heredity be an exciting factor in the development of paranoia.

From the foregoing brief summary of facts, we are to draw the conclusion not only that alcohol acts as a poison to the nervous system, but also that in its action it resembles in a general way other poisons and toxins. The delirium, the confusion, and the stuporous insanity resulting from alcohol differ in no essential particular from the deliria, confusions, and stupors due to other poisons or due to the various infectious diseases. Intrinsically the phenomena are the same.

Details of Treatment of Drug Habits and Insanities of Intoxication

The outline given of the action of alcohol will serve as a text for general remarks upon the treatment of the drug habits and toxic insanities as a whole. Two important facts should be prominently borne in mind: first, the **underlying neuropathic constitution;** and, secondly, the **damage** done to the nervous system and other organs by the poison. These considerations at once indicate that treatment must consist in something far more radical than the

the physician, and also upon the effect which is obtained from the use of strychnin and digitalis. When in spite of other measures the pulse fails, and becomes frequent and weak, and the skin becomes cold and clammy, it is quite obvious that alcohol must be given in full doses. Indeed, such a condition of affairs should be anticipated. Frequently solution of ammonium acetate, a half-ounce every hour or two, proves very serviceable in permitting a more rapid or earlier withdrawal of the alcohol, keeping up elimination, and stimulating the heart. At times it is well to combine with it ammonium carbonate. As in other forms of delirium, it is also necessary to administer remedies to produce sleep. If the delirium be very active, trional and sulphonal, so efficacious in ordinary forms, may be insufficient. Here full doses of paraldehyde will in the majority of cases prove effectual and will greatly enhance the action of trional and sulphonal. Now and then, though not often, the physician may be compelled to fall back upon other narcotics. In this connection the depressing action of large doses of bromid should not be forgotten, nor should the untoward cardiac effect of chloral be lost sight of. We should remember, in regard to morphin, that alcoholics are sometimes dangerously tolerant to the drug. Failing to induce quiet, a second dose may be resorted to after too short an interval. The fact also of the frequency of renal involvement in alcoholism, should make us additionally careful with regard to the use of this drug. Under certain conditions, however, when other narcotics fail, it is perfectly proper to use a combination of bromid, chloral and morphin. Such a combination is, as a rule, very efficacious. It should contain a maximum amount of bromid and but moderate doses of chloral and morphin. The bromid should preferably be in the form of the ammonium salt. Hyoscin hydrobromate or scopolamin may also be employed, especially in association with other remedies. We should be satisfied if only a moderate degree of sleep is obtained, for as time passes and the symptoms subside, sleep comes on spontaneously. If the case be complicated by pneumonia or other visceral disease, this, of course, will demand especial attention. Supporting measures are then doubly indicated. If there be suppression of urine or serious renal involvement, intravenous saline infusion or hypodermoclysis, with

or without venesection, should, among other measures, be held in mind. (See volume IX.)

Chronic Alcoholism

In the management of chronic alcoholism, we are especially to consider the underlying neurasthenic or **neuropathic factors,** and whatever plan of treatment we institute must take these factors into account. Secondly, and of equal importance, is the detailed study of the patient's **symptoms.** There is almost invariably present a marked chronic gastritis. The liver also should be carefully examined, bearing in mind, of course, the relation of alcoholism to cirrhosis. The heart and blood-vessels and the urine should be similarly studied. It is unnecessary to point out here possible changes in the lungs, save to mention the not infrequent coexistence of phthisis and alcoholism, and the further fact that many confirmed alcoholics suffer from chronic bronchitis. The practical point for the physician to bear in mind, is the fact that the alcoholic is a man who is ill; that he is suffering not so much from the presence of the poison, as from a diseased nervous system and from various visceral complications, slight or pronounced, as the case may be.

We are confronted at the outset of the treatment by the problem of the **withdrawal** of the stimulant. I believe that it is always best to attempt rapid or immediate withdrawal. If no recent alcoholic excesses have been committed, this can, as a rule, be accomplished without much difficulty. When, however, the patient is just passing through an exacerbation of his alcoholism, withdrawal will have to be more gradual. It is to be remembered, however, that the moral effect of a too gradual or too prolonged withdrawal is bad. As the stimulant is withdrawn, food, tonics, and supporting measures must be substituted, and the treatment thenceforward does not differ from that adopted in other asthenic states. Special symptoms and special visceral complications, as already indicated, must be treated appropriately.

Unfortunately, the management of chronic alcoholism is not so simple as the foregoing paragraph might seem to indicate. The patient is but rarely a willing subject of treatment. He is quite commonly impatient of restraint or control of any kind. It is true

that men sometimes voluntarily enter institutions for inebriety, but as a rule they do so with the understanding that they are to have as much stimulant as they think they need. In the United States,—speaking generally,—and in many other countries, inebriates cannot be restrained unless they have crossed the borderline into actual insanity. Forcible restraint of inebriates can be carried out in America, however, in a few States. In Massachusetts, for example, by special provision of law it is possible to subject confirmed topers to the same discipline as applies to the insane elsewhere; and a somewhat less satisfactory law has recently been passed in Pennsylvania. Drunkards really need the same degree of care as the insane, and special institutions for their control should be provided everywhere. In Austria a procedure, known as the 'Curatel,' has been established. This consists in the local appointment of a curator or administrator who acts in the capacity of a guardian to the patient, and under the same provision the patient may be placed in a public asylum. In less enlightened or more conservative countries, physicians are restricted to less effectual means.

If the patient's circumstances permit, the best plan of treatment consists in withdrawing him from his ordinary surroundings, instituting a system of **absolute isolation,** and at the same time placing him under the care of a **trained nurse.** Such a plan as this is, in suitable cases, almost invariably followed by the most gratifying results, results which are also far-reaching and frequently permanent; the isolation of the patient gives the physician the best opportunity for the study of the morbid conditions underlying the disease, and for their appropriate treatment.

Whenever practicable, it is wisest to institute a form of **rest treatment.** The isolation of the patient in a room with a special nurse of the same sex constitutes the most effective means of restraint that can be devised, while the moral effect is of the very best. Under these conditions the stimulant can be withdrawn as rapidly as the symptoms of the patient justify. The patient should be kept in bed for a number of weeks in succession, and during this time massage, baths, Swedish movements, electricity, and such other expedients as suggest themselves should be employed from time to time. Under

rest, full feeding, and full physiologic measures, it is found that the craving for the stimulant rapidly grows less.

It is a good plan at the beginning of the treatment to administer small doses of calomel and to follow this after a time by a saline cathartic. A **diet** should then be instituted adapted to the digestive tract and the needs of the patient. In many cases it is necessary to begin with a liquid diet—beef-tea, broths, soups, and meat preparations generally. If the stomach tolerates it, however, some solid or semi-solid food should be given at the outset, or at least should be begun as early as possible. The weakness of the alcoholic is, as a rule, very pronounced, and is not relieved by mere beef preparations. Milk also should be added to the diet at as early a date as possible. A great many alcoholics have an aversion to milk, but as a rule they can readily be brought to take it if a small dose of alcohol be added. As the treatment progresses, the alcohol can, of course, be withdrawn. Frequently, instead of adding alcohol to the milk, our purpose is answered equally well by diluting the milk with some carbonated water, such as soda-water or Apollinaris. In other cases, again, it is a good plan to peptonize the milk, the cold process being generally preferable. At times some other expedient may be better, as giving instead of whole milk, skimmed milk or buttermilk. The patient should be fed at frequent intervals; that is, about six times daily, as in ordinary rest treatment. The solid food, which is given in small quantity at first, should gradually be increased until it is brought up to a normal amount. When the patient is **obese,** the diet is modified accordingly. Starches are excluded in all cases because of the gastric catarrh so commonly met with, but here, other fattening foods also should be avoided. Lean meats, fish, green vegetables, may be given; in general, we should follow the ordinary diet adapted to obesity.

The general principles which obtain in ordinary rest treatment for neurasthenia are fully applicable here. **Massage** should at first be given somewhat gently, as patients not infrequently present some soreness of the limbs, suggestive of neuritis. In many cases undoubted neuritis is present, and in these cases massage can only be employed partially. **Baths, electricity, passive movements,** and **Swedish movements** with resistance are to be employed as indi-

cated. After a while a marked improvement is noted in the patient's general condition, and soon it becomes necessary to permit him to leave his bed for brief periods of time, increased daily, so that at the end of six or more weeks he is up the greater part of the day. As soon as this is the case, some form of **active room exercise** should be instituted. The exercise should, of course, be gentle at first and only very gradually enlarged in amount. Subsequently, according to the progress of the case, these exercises should be followed by **exercise in the open air,** always, of course, in the company of the nurse.

In mild cases, it is possible to conduct the entire treatment without the use of **drugs,** but usually the latter are indicated, and may be employed with great advantage. They are roughly grouped into three categories: first, those indicated by the symptoms arising from the withdrawal of the alcohol; second, those indicated by the deranged visceral functions; and, third, those which are stimulating, or antagonistic to the action of the alcohol.

The **symptoms** which arise during the withdrawal of the alcohol consist generally in marked increase of nervousness, of insomnia, and sometimes of headache. As a rule, these indications can be readily met by the administration of the milder sedatives and hypnotics—the bromids, trional, or sulphonal in combination with trional, hyoscin hydrobromate, scopolamin, and, occasionally, chloral. Morphin and chloral are best avoided or their use limited to occasional administration only. The use of hypnotics should as far as possible be conjoined with the administration of some form of bathing. In most cases a warm sponge-bath between blankets or a warm tub-bath of short duration greatly enhances the action of the sedatives.

In the second category of drugs, we have those whose action is directed to the condition of the **digestive tract,** of the **kidneys,** or of the **heart** and general **circulation.** As already stated, there is almost always present a gastric catarrh, and this must be taken into consideration not only in the diet, but also in the medicines prescribed. Silver nitrate, one-fourth grain, in pill, with one-fourth grain extract of hyoscyamus, administered three times daily, half

an hour or twenty minutes before meals, has, as a rule, a very happy action. At times lavage is necessary, though in severe cases this need not be continued very long. Sometimes the morning nausea and vomiting of chronic alcoholism are troublesome, but usually they readily subside. Occasionally a course of divided doses of calomel, at other times of sodium phosphate, is of value. Small doses of other saline laxatives may likewise be employed. A little later the fluid extract of cascara can be given, just as in the rest treatment of neurasthenia.

In the third category of drugs we have, as already stated, those which are **tonic and stimulating,** or possibly **antagonistic** to the action of the alcohol. They are, however, to be regarded merely as adjuvants in the treatment, and should not be relied upon to any great extent. Strychnin generally proves very valuable. Usually moderate doses, say one-fortieth grain (1.5 milligrams), answer every purpose, though if there be marked cardiac weakness, much larger doses—for instance, one-twentieth grain (3 milligrams)—should be given. It is not improbable that strychnin, so employed, decidedly diminishes the appetite for alcohol. When used in large doses, however, it may at first increase the nervousness from which the patient suffers. It is wisest for a time to begin with moderate doses. Atropin is another highly useful drug. Like strychnin, it appears to lessen the depression caused by the withdrawal of the alcohol. It appears not only to act as a stimulant, but also to diminish somewhat the epigastric sinking sensation from which alcoholics suffer. It should be administered in moderate doses, say one one-hundredth of a grain (0.6 milligram) twice daily, and if it is found that the patient is tolerant of the drug,—that it does not produce dryness of the mucous membranes or other unpleasant symptom,—the frequency of the dose may be increased to three times daily. Now and then cases are met with in which larger doses, say one-sixtieth or one-fiftieth of a grain (1 to 1.2 milligrams), are well tolerated. It proves especially valuable in cases in which there is marked depression with coldness and clamminess of the extremities. Like strychnin, atropin may be given hypodermically, and when the depression caused by the withdrawal of the alcohol is very marked, this method of administration should be resorted to. In other cases it is most conveniently

given by the mouth. Coffee should, of course, also be used; occasionally caffein proves most valuable. Digitalis, strophanthus, or other cardiac tonic may be given with good result. These drugs are of as much service as the strychnin and the atropin, if not of greater value than either. They should be given in sufficient dose to produce a full physiologic effect upon the pulse. Later in the treatment, other drugs, such as arsenic, iron, and the bitter tonics, may be administered as indicated. We should, of course, never prescribe the bitter tonics in the form of tinctures. As a rule, their exhibition in pill form with or without a small quantity of capsicum answers every purpose. Gold and sodium chlorid, which, under the name of bichlorid of gold, was much vaunted by advertising pretenders some years ago, as a specific for alcoholism, is almost inert, its action being that of a very feeble tonic and alterative. The use of apomorphin or of other nauseant drugs in the treatment of alcoholism is unscientific and is to be strongly deprecated. The plan also of substituting some other drug, such as morphin, cocain, or chloral, as the alcohol is withdrawn, cannot be too strongly condemned.

The patient should be kept under treatment for as long a period as possible. After he leaves the immediate care of the physician, he should be under the supervision of a well-instructed professional nurse. As a rule, when a subject of alcoholism has been properly treated and for a sufficiently long period, the tendency to relapse is comparatively slight. It is exceedingly important, however, in the after-treatment to guard the patient against nervous or physical strains of any kind. Relapses are not infrequently to be traced to indiscretion in overwork or to taking part in social functions with the attending loss of sleep and the temptation to the convivial use of wines and liquors. The danger of the depression caused by the excessive use of tobacco, and the consequent craving for stimulants, should be especially pointed out. The greatest difficulty is, of course, experienced in the treatment of those cases in which there is a marked neuropathy. Especially is this the case with patients in whom the drunkenness comes on in spells or well-defined attacks, attacks which probably correspond to waves of emotional depression, hypomelancholia. As far as possible, the life of the patient who has

been treated for alcoholism should be based upon physiologic principles. Everything should be done to keep the organism at as high a physiologic level as possible. The importance of physical exercise, especially out-of-door exercise, in this connection is obvious.

Hypnotism was some years ago suggested as a mode of treatment of alcoholism, especially by Forel. Of its efficiency I have no personal knowledge. It is very doubtful, however, whether any method of treatment which fails to recognize fully the pathologic groundwork underlying the alcoholic habit, can be successful. Certainly, in all but very slight cases, hypnotism can be no more efficient than it is in actual organic disease. We should remember also that, as has been pointed out by Crothers, alcoholics are generally very poor subjects for hypnotism.

Alcoholic Confusional Insanity, Alcoholic Dementia, and Alcoholic Paranoia

The treatment and management of the insanities resulting from alcohol are to be based upon the general principles elucidated in the foregoing discussions. The management of alcoholic confusional insanity does not differ from that of confusional insanity from other causes. **Rest methods** and general physiologic measures must again be applied. It is remarkable in how great a degree alcoholic insanities yield to treatment, provided they have not advanced too far or continued too long. Even in cases of alcoholic dementia, so profound as to simulate paresis, most remarkable improvement is observed. Alcoholic paranoia alone offers an exception. In alcoholic paranoia we have to deal with a patient who has, so to speak, the paranoiac constitution; the alcohol has merely been the exciting cause of the development of the disease, the patient being already predisposed by his organization to that form of nervous degeneration which manifests itself as delusional insanity. When improvement or recovery follows in alcoholic confusional insanity, or alcoholic dementia, it usually does so only after many months of treatment; but the degree of improvement is at times remarkable, the patient becoming apparently normal, save for some persistence of nervous weakness or a degree of inability for sustained intellectual effort.

Morphinism

Much of what has been said in regard to the treatment of alcoholism is applicable to the treatment of morphinism. The same general principles are applicable. The treatment resolves itself into the treatment of the **habitual** and of the **occasional** users. There are some patients who, like the periodic alcoholic, make use of the morphin or of the opium at certain periods only, and then again voluntarily abandon the drug. It is a common thing to find persons who suffer from recurrent attacks of headache or neuralgia, or from menstrual troubles, using morphin periodically. Women especially are prone to form such a habit—a very dangerous one, for sooner or later the periodic users of morphin become slaves to the medicine. It is obvious that if patients come under our care for such a use of morphin the pathologic condition which necessitates this use—the headache, the neuralgia, or the menstrual pain—should be the first object of our attack.

The treatment of the periodic users of morphin is far more difficult than that of those who use the narcotic continuously. It is also a remarkable fact that it is, as a rule, less difficult to treat successfully a patient who has used rather large doses of the drug, but who has done so for a short time only, than it is to treat one who has used only small quantities, but has used them for many years. Physicians cannot rid themselves of the great responsibility involved in the abuse of morphin; for it must be admitted that it is too frequently prescribed for comparatively trivial affections, and that some physicians are altogether too ready with the use of the hypodermic syringe. Every prescription containing morphin for the relief of pain should be marked above the physician's signature with the imperative order: "*Not to be renewed.*" Refilling a prescription so marked renders a druggist liable to prosecution, and physicians can by this simple expedient exercise a certain amount of control over their patients. Further, prescriptions for the relief of pain should be for a few doses only, and the patient himself should be warned against the unnecessary repetition of the dose. Again, it has a number of times come within my knowledge that a physician has directed patients to purchase hypodermic syringes in order that he should not be annoyed or disturbed by too frequent calls. Such a course cannot be too

strongly condemned. Another and prolific source of the morphin or opium habit is the ease with which narcotics can be purchased by the layman. It is true that the law forbids the dispensing of poisons without physicians' prescriptions, but violation of the law is a matter of common observation.

Unlike the abuse of alcohol, the long-continued use of morphin is but rarely followed by frank and outspoken insanity. There is, however, a marked diminution in the capacity of the patient for work or for sustained effort of any kind. The mental faculties are usually somewhat obtunded, though not always to a marked degree. The moral sense always suffers severely. Generally, the statements of the patient are absolutely unreliable in regard to everything that pertains to the use of the drug. A patient whose pupils are profoundly contracted and who presents the brilliant countenance and the evident signs of well-being following a recent dose of morphin, may assure the physician in the suavest manner possible that he has not had a dose for many days or weeks past. Sleep is always greatly disturbed. Not infrequently diurnal somnolence alternates with nocturnal insomnia. Now and then hallucinations and mental confusion make their appearance, especially during periods of the withdrawal of the drug. The hallucinations are mainly auditory and are painful in character. The delusions are persecutory and terrifying.

If the morphin has been used for a long period, more or less decided and persistent mental impairment follows; this condition is analogous to alcoholic dementia but less marked. The patient frequently presents, besides, hyperesthesias and paresthesias of the extremities. His nutrition is poor, the skin is yellow, relaxed, and dry, while the superficial fat largely disappears. The appetite is diminished, cardiac palpitation is of frequent occurrence, while asthmatic symptoms, more or less marked in character, make their appearance, especially in the intervals of the taking of the drug. Sexual power and desire, as in alcoholism, are much diminished.

As in the case of alcoholics, we are confronted with the difficulty of controlling the patient. Only in exceptional cases can success attend the physician's efforts when continual supervision is not possible. No treatment is so efficacious as that by **full rest** methods,

largely because of the complete control which is gained over the patient. Partial rest methods fail. Full rest methods, on the other hand, are very frequently crowned with success. As in the case of alcoholism, the patient should be placed in bed, should be carefully isolated, and should be placed upon a diet especially adapted to the case—one which contains large amounts of milk, fruit, and vegetables, and a relatively small amount of beef. Morphinists, as a rule, have a diminished appetite, especially for meats. The remarks already made in regard to the diet in alcoholism apply with but slight modifications here. As a rule, the white meats (fish, oysters, breast of fowl, etc.) are well digested, and are found more beneficial than the red meats (beef, lamb, etc.). In addition to the rest and the special feeding, bathing, massage, and electricity should be employed systematically. **Isolation** is absolutely imperative. No one should have access to the room save the nurse and the physician. No letters, packages, or newspapers should be admitted to the room under any pretext. Patients practise all sorts of devices to secure possession of the coveted stimulant. Bribery of servants is attempted, or an order may be written on a piece of paper, the paper wrapped about a coin, and the missive thrown out of a window; in my own observation this method upon one occasion actually enabled the patient to procure the drug. It is remarkable also to what extent friends and relatives will enter into collusion with the patient to supply him with the stimulant, all fearing that the doctor is practising great cruelty and is withdrawing the drug too rapidly. Vigilance in such cases cannot be too great.

The question of the **rate of withdrawal** is not susceptible of a routine answer, but must be decided with special reference to all the circumstances in each individual case. Some writers advise immediate withdrawal, others rapid withdrawal, and others again very gradual withdrawal. Thus, Gilles de la Tourette advises sudden withdrawal if the patient has been taking large doses, say, 5 to 6 grains daily, and gradual withdrawal if the patient has been taking less than five grains; while Comby advises sudden withdrawal invariably. It is my own practice not to begin withdrawal until rest treatment is fully under way. We must remember that the morphin habitué labors under an excessive fear lest the drug be

withdrawn too soon. Besides, sudden withdrawal always implies a period of frightful physical and mental suffering. Further, the patient is, as a rule, intensely distrustful. I know of no class of patients with whom it is more difficult to establish friendly relations or in whom it is more difficult to inspire confidence. However, if the patient learns after his first few days of rest and isolation that he is still receiving his hypodermic injections or that he is still being allowed his usual quantity of laudanum or opium, confidence sooner or later asserts itself, especially as the physical comfort resulting from the bathing, massage, and proper diet soon becomes pronounced. Withdrawal may then be begun, and it is almost always best conducted very gradually. At first the diminution of the dose is practically imperceptible; later on the reduction may be more rapid. If the patient has been in the habit of receiving hypodermic injections, it is my practice not only to reduce the dose gradually in the manner indicated, but also to begin adding to the injection small doses of strychnin nitrate, say one-fiftieth of a grain (1.2 milligrams), and if the skin be very moist, small doses of atropin sulphate, say one two-hundredth of a grain (0.3 milligram). Hyoscin or scopolamin may also be employed in doses of one one-hundredth or one two-hundredth of a grain (0.6 to 0.3 milligram). These drugs markedly allay the nervousness and suffering of the patient. It is needless to say that after the morphin has been discontinued entirely, hypodermic injections of strychnin or of strychnin and atropin may be kept up for some time without informing the patient of the change. Cocain should never be used; a large number of patients that come under our care for the morphin-habit have already acquired the cocain-habit. The same remarks apply to the use of alcohol. Many of our cases, indeed, are instances of the 'triple' habit, namely, morphin, cocain, and alcohol.

The reason for withdrawing the drug in the gradual manner I have described, is not only to diminish the sufferings of the patient, but also to prevent the onset of serious symptoms. Every now and then, if the drug be abruptly withdrawn, signs of collapse—diarrhea, sweating, cardiac weakness, and dyspnea, with excessive prostration —may set in. In other cases, again, mental symptoms resembling those of confusional insanity make their appearance, the patient becoming hallucinatory, delusional, and finally delirious. Such

symptoms are not likely to make their appearance if the drug be withdrawn in the manner indicated and under fully established rest conditions.

Because morphin patients are so untrustworthy, and because the means of obtaining the medicine save under rigid isolation are so many, the physician should carefully watch the patient in order to learn whether withdrawal is actually taking place. Absolute supervision is possible only under absolute isolation, and even then, by the most unexpected means, the patient may be placed in possession of the stimulant. However, if the quantity administered is really being diminished, certain **symptoms** inevitably make their appearance. They are, first, restlessness, which may become very marked, and is accompanied by more or less insomnia. The patient also yawns a great deal or sneezes, complains perhaps of having caught a slight cold, or perhaps has an attack of difficult respiration, simulating asthma. In addition to restlessness, he manifests signs of fear, complains of a sense of oppression, declares himself dissatisfied with the treatment, and insists upon going home. Involuntary movements of the legs and arms also make their appearance, the limbs being thrown about the bed. At times this is merely due to restlessness; at other times distinct involuntary jerkings are observed. Intention tremor also becomes evident. When, for instance, the patient attempts to pick up a glass of water, it is noticed that he trembles decidedly. Sometimes, instead of an asthmatic attack, all the symptoms referable to a cold in the head or a spasmodic cough may be noted. Sometimes vesical tenesmus is present. Palpitation of the heart may also be evident, or the patient may complain of fluttering sensations in the precordia.

Obviously, if none of these disturbances be observed, and if the patient continues comfortable and in good spirits, sleeps well, and is contented with his surroundings, he is obtaining the drug surreptitiously. It should be remembered that even under very gradual withdrawal some of the symptoms described make their appearance, and may, indeed, become so marked as to necessitate for a time a return to a larger quantity. No picture is more alarming than that often presented by morphin patients in the stage of withdrawal, especially if the depression produced by the vomiting and

diarrhea be accompanied by mental confusion and delirium. These symptoms cannot be relieved by other remedies, and a recourse to morphin for a time is not only indicated, but is really the only course to pursue. The history of the withdrawal in a confirmed case of morphinism is, in my experience, not a steady and unbroken decrease in the quantity of the drug, but embraces a series of diminutions, the progressive decrease being every now and then broken by a return to a slightly larger quantity.

The detailed **method of diminution** depends largely upon the individual case. As a rule, I continue for a number of days the quantity of morphin that the patient is habitually taking; I then begin to diminish the doses given in the early part of the day; those given at night are continued in full quantity for a somewhat longer period. This is contrary to the practice of others, who begin by diminishing the evening doses. I have observed, however, that cutting off the evening doses makes the patient restless and sleepless; while the reduction of the morning dose, though producing restlessness, is not attended by the great disadvantage resulting from insomnia and its attendant evils. No hard-and-fast rule can, however, be said to apply. The patient should be given the drug when he needs it most, and it should be first diminished or withdrawn at those periods when he needs it least. Inasmuch as morphin injected hypodermically is eliminated by the stomach and is subsequently reabsorbed by the intestines, Hitzig has suggested that in treating morphinism we should systematically wash out the stomach. This seems to me an unnecessary precaution. The procedure adds greatly to the distress from which the patient is already suffering, and it is doubtful whether the quantity of morphin thus gotten rid of is really large.

Auxiliary Drugs.—As already stated, during withdrawal, we should make free use of hypodermic injections of strychnin nitrate and atropin sulphate. As in the management of alcoholism, the dose must be adapted to the case. In morphinism relatively larger doses of these drugs are tolerated. However, in many cases it is possible to bring about withdrawal without their use. Occasionally it is a good plan to use digitalis or strophanthus. As the treatment progresses, and during the convalescent period, bitter tonics, mineral

acids, iron, arsenic, or malt and other nutrients may be added, as seems expedient.

Among drugs to which especial virtue in the treatment of morphinism has been ascribed, we should mention sodium phosphate. It has been especially advocated by Luys. He believes that it has a supporting action on the nervous system and should be given hypodermically. Beyond purely theoretic considerations, the practice has nothing to recommend it. Dr. W. W. Winthrop, of Fort Worth, Texas, has recently called attention to the employment of 'husa' as a remedy for the cure of the opium-habit. Husa is an unclassified, or at least unidentified, plant found in the Everglades of Florida. According to Winthrop, it is a diffusible stimulant, causing gentle excitement, followed later on by sedation and sleep. From three to four months are necessary to effect a cure. It appears also that precaution must be taken to prevent the formation of a husa-habit. The treatment of the opium-habit by this means is therefore open to the same objection as any other method depending upon the substitution of one drug for another. Cocain, which has been recommended by Skene, Mattison, and more recently by Keugla, is merely a makeshift substitute, and should not be resorted to. Caffein, also recommended by some writers, may occasionally be used in cases in which withdrawal is followed by great depression, or in cases in which the early morning depression is very marked. It should not be given toward evening for fear of adding to the insomnia.

Insomnia and restlessness not infrequently demand the use of the bromids. Ammonium bromid may be given in doses of thirty to forty grains (2 to 2.5 grams) at intervals of four hours. Better still, hyoscin or scopolamin may be given in small doses twice or three times daily. At times trional may be given; if possible, sulphonal should be avoided, as should also chloral, both of these drugs favoring the confusion and delirium occasionally met with in severe morphinism. The **hot bath** offers a harmless, and often a very efficient, method of combating the insomnia.

Suggestion, advocated by some writers, with or without hypnotism, is of little or no value in the treatment. Hirt, for instance,

treats cases outside of institutions, if the daily dose be not greater than 0.25, 0.50, or at most 0.75 gram (4 to 12 grains), with the aid of **hypnotism.** He places a reliable female nurse in charge of the patient. The morphin is then suddenly withdrawn. Sleep is produced by chloral or trional or by warm baths. In four or five days the treatment by hypnotism is begun. Hirt states that only a slight degree of hypnosis is required. The treatment extends over a period varying from twenty-one days to eight months, but recovery can be regarded as established only in one-and-a-half to two years after the last hypodermic injection has been given. Certainly the method has nothing to recommend it on the ground of economy of time. Besides, success seems to be very doubtful. It cannot but be greatly inferior to treatment directed primarily to the re-establishment of the general health, such as is embodied in the application of rest methods.

Duration of Treatment.—The treatment of the morphin-habit by the rest method should be **continued** for a very long period; that which is sufficient for ordinary cases of neurasthenia or hysteria being totally insufficient for cases of morphinism. A course of three months of treatment is, as a rule, absolutely demanded, and for many patients the treatment should embrace five, six, or even seven months. I do not mean to imply that the patient should be kept in bed during all of this period, but that full rest methods should be kept up for from three to four months, and after this a partial rest treatment should be instituted, the patient being up and out of bed, and exercising out of doors, daily for some three or four hours. In cases so treated I have met with most gratifying results. Success, it need hardly be stated, is still further assured if the patient's nurse accompany her to her home or elsewhere and remain with her for a period of several months longer. If practicable, the entire length of treatment under the supervision of the nurse should extend over a year. In no class of patients is relapse so apt to occur as in morphin users, and it is for this reason that every possible precaution should be taken, provided the patient's means permit it.

After-treatment.—With regard to the management of morphin cases subsequent to the rest treatment, the general principles already

indicated in the section on Alcoholism are applicable here. Everything should be done in the way of proper diet and exercise to keep the patient's health at as high a level as possible. Here also it is important to avoid fatigue, and especially strain, excitement, and worry. Cases presenting special difficulties, are those in which the habit has been acquired in the attempt to relieve a painful affection which still continues, as, for example, a persistent neuralgia, frequently recurring headache, or painful menstruation. It is needless to point out that every effort should be made to discover and, if possible, eradicate the cause of the painful affection, whatever it may be, treating the headache or neuralgia upon such principles as are indicated; or if functional or organic disease of special structures be present,—*e. g.*, pelvic disorders, in women,—instituting such means, medicinal or surgical, as are necessary.

Cocainism

In the treatment of cocainism, we have again to apply the principles already detailed in the consideration of the treatment of alcoholism and morphinism. Cocainism arises usually in one of two ways. It may be acquired as a concomitant of the morphin habit, the patient having learned to take cocain in order to diminish the amount of morphin, or perhaps it has arisen in the unscientific treatment of morphinism by cocain substitution. The second and far more frequent cause of the cocain habit is the use of the drug in the treatment of affections of the nose. Not only is cocain applied by the surgeon preparatory to the performance of trivial operations, but it not infrequently happens that the patient is furnished with a solution containing the drug which he is directed to apply by means of a cotton pledget or by means of a spray. Within my own knowledge, not a few cases of cocainism can be traced to some such misapplication of the drug, the victim not infrequently being himself a physician. In prescribing cocain for purely local affections, we incur a responsibility not less than that which we incur in prescribing morphin. We should never lose sight of the fact that every local application is accompanied by a certain amount of general action. After the use of cocain over a large mucous surface, such as the nasal chambers, the patient experiences not only local anesthesia,

but a comfortable sense of warmth and well-being diffused over the body. Further, the nerve-centers are stimulated, especially if the doses have been large, very much as they are stimulated with alcohol, save that the stimulation is far more intense and sudden.

The patient has, as a rule, no difficulty in obtaining a supply of the drug, and often makes a most reckless use of it. Not infrequently he learns to pour the solution down the nasal chambers from the bottle, some of the solution flowing back into the throat and being swallowed. After the taking of the dose, there is intense excitement with increased pulse-rate, accompanied by a sense of intoxication. There is a marked increase of the nervous irritability and the ideas flow much more rapidly than normally.

A form of cocain inebriety is also now and then met with, which is due to the abuse of various coca-containing medicines. The continued use of the so-called 'tonics,' 'restoratives,' 'elixirs,' and 'wines,' which, in addition to alcohol, contain coca, cocain, kola, and like drugs, is much to be deprecated. These preparations are not tonic but merely stimulating, and they cannot fail to prove injurious. Occasionally they give rise to drug habits and to alcoholism as well. In many cases a fancy name, in others an incomplete chemical or pharmaceutical name, disguises, or at least fails to reveal to the careless user or prescriber, the true nature of the harmful compound.

The habit is frequently established with rapidity. If the drug be withdrawn for a time or if the patient fail of access to it, he is seized with a feeling of great discomfort, of marked oppression, of faintness, palpitation, and general nervousness. The cocain-user becomes excessively irritable, sharp and short in his speech, jerky in his manner, and exceedingly restless. Inability to work and ready fatigue are prominent symptoms. There is more or less impairment of will-power and loss of memory, and the patient grows as unreliable in his statements and as reckless of the truth as the morphinist. He is pale and haggard; his general nutrition is much impaired, and his weight is below normal. Often he presents a picture of premature senility. His reflexes are exaggerated. His movements are those of unrest and constant change of position. At times his muscles are the seat of spasmodic twitchings. His pupils are dilated. Frequently there is a tremor of the tongue and sometimes of the hands. His

pulse is rapid and he frequently suffers from palpitation. His skin is likely to be cold and moist. He sleeps but little—often, indeed, insomnia persists for days. In addition, he may present various symptoms of mental confusion and delirium. Sometimes he is the victim of delusions of persecution. At other times he becomes, if married, insanely jealous, and may, as in alcoholism, entertain the delusion of marital infidelity. Not infrequently hallucinations, visual and auditory, and especially hallucinations referred to the cutaneous surface, develop. The patient frequently believes that there are vermin or fleas upon his person, or in his bed or about his room; and he often spends a large part of his time in bathing, rubbing, scratching, or in making efforts to rid himself of the imaginary pest. So frequent is this hallucination of cutaneous sensibility, that a patient presenting it is said to suffer from the 'cocain bug.'

Withdrawal.—During the withdrawal of the drug, the symptoms just detailed become much exaggerated. If no exaggeration is noted, it is very probable that withdrawal is not actually taking place, or that some other drug is being substituted. Usually this substitute is morphin. Contrary to what one might expect, it is generally practicable to withdraw cocain far more rapidly than either morphin or alcohol. Curiously enough, after the cocain has been withdrawn for a period, the patient sleeps without the administration of drugs; frequently, indeed, he cannot keep awake. At times, however, it is necessary to give moderate doses of hyoscin or scopolamin, the bromids, or trional or sulphonal, for some time. It is proper, in order to relieve the depression from which the patient suffers, to allow a cup of strong coffee in the early part of the day.

As already stated, the cocain-habit may have been acquired in the attempt to cure the morphin-habit, and cocainism and morphinism may exist together. In such cases, the cocain may be entirely withdrawn at once. The morphin, however, should be withdrawn in the gradual manner already described. Similarly, the patient may be the victim of the so-called '**triple habit**'; that is, he may use not only morphin and cocain, but also alcohol. Here the problem presented often taxes our ingenuity. As a general rule, however, it may be stated that it is expedient to withdraw the cocain at once, the alcohol rapidly, and the morphin slowly. Morphin distinctly

overshadows the other drugs, and, as a rule, it is best to continue this agent in full doses for a number of days. Later it may gradually be diminished. In other words, the treatment of the 'triple habit' resolves itself sooner or later into that of simple morphinism.

It cannot be too strongly insisted upon that **rest** and **isolation,** as detailed in the sections on Alcoholism and Morphinism, apply equally to the treatment of cocainism. Cocain-users are even less to be trusted than are morphinists. They are, when the habit is confirmed, tricky, treacherous, and utterly untrustworthy. I know of no cases more difficult to control. They betray a degree of shrewdness and cunning in circumventing the physician and deceiving the nurse that is almost incredible. They are, on the whole, far more difficult to treat by rest methods because of their extreme restlessness. The inclination to move and to be about is so great as to make restraint doubly difficult. So well known is this fact that hospitals which receive alcoholics or morphinists for treatment will very frequently decline cocainists. The latter will often, in spite of the utmost vigilance, smuggle into their rooms, or conceal about their persons and belongings, quantities of cocain, or will succeed, if the nurse be not careful, in stealing or otherwise obtaining a supply. A hypodermic syringe is often a coveted object, and one of my patients upon one occasion stole a hypodermic syringe, the whereabouts of which the closest search failed to reveal, until finally a digital examination was made of the rectum. Here the syringe was concealed. No expedient is too disgusting, no conduct too objectionable, so long as the coveted stimulant is obtained. Noise, threats of legal prosecution, and defiance of nurse and physician are the order of the day. The term 'cocain fiend' has not been applied to these patients without cause.

Confinement, under the supervision of a trained nurse, in a room to which no other person but the physician has access, presents practically the only favorable prospect. As in the case of morphinism, this isolation should be practised for from two to three months or longer. The general principles already indicated with regard to the use of tonics in the convalescent period of morphinism, apply equally here. We should remember that our patient is below weight, and that he presents the symptoms of nervous exhaustion to a profound degree.

The prolonged abuse of cocain more frequently than morphin gives rise to **insanity.** Like alcohol, it may give rise to a dementia resembling paresis—a pseudo-paresis, which is in reality a profound confusional insanity with expansive or persecutory delusions as the case may be. It may become more pronounced and finally terminate in a more or less prolonged stupor or dementia, a so-called cocain-paresis. When cocain-poisoning has attained so severe a degree as this, the prognosis is, as a rule, unfavorable as regards recovery.

Chloralism, Trionalism, and Other Forms of Chronic Intoxication

It is not necessary to consider in detail the other forms of drug intoxication with which the physician has to deal. Enough has been said in the foregoing pages to indicate the general plan of treatment which is to be followed in given cases. The temptation is always to replace the drug that is withdrawn by another, and indeed, in practice, especially in the treatment of chloralism, such a procedure is for a time necessary, but it should be discontinued as early as possible.

Chloral is a poison depressant to the heart and vasomotor apparatus. Dyspnea, vertigo, and general sense of weakness are among the symptoms likely to be present. In well-established cases there are marked nervousness, marked insomnia, and a certain degree of mental weakness, as manifested by loss of will-power and failure of memory. In some cases an emotional depression is present which may simulate melancholia. The patient is weak, his movements are tremulous, and he frequently complains of palpitation of the heart. These symptoms must be combated by food, by rest and by other physiologic measures, and by tonics, such as digitalis, strophanthus, and strychnin.

It not infrequently happens that patients become the victims of narcotic habits other than those already discussed—*e. g.*, **trionalism** or **sulphonalism.** Sometimes, also, one of the less commonly used narcotics, such as **paraldehyde, somnal,** or **chloralamid,** is the intoxicant to which the patient becomes addicted. One of the worst and most horrible cases of drug inebriety that I have been called

upon to treat was a case of paraldehyde habit in which a woman took enormous doses of this disgusting narcotic daily. She constantly reeked with the unpleasant odor of the drug, while her mucous membranes were ulcerated and her form much emaciated. Occasionally **ether** and **chloroform** are used by inebriates. Among the rarer forms of drug addiction met with at the present day are the **phenacetin** habit and the **antipyrin** habit. These habits, however, are less harmful than those already mentioned, and can, as a rule, be treated more readily.

General principles, of course, are to be applied in the treatment of a drug habit no matter what its cause. Among these, let me repeat, are, first, the **isolation** of the patient in such a manner that his access to the drug, save as administered by the physician, is absolutely cut off; second, the employment of such therapeutic measures as will raise **the general health** of the patient to the normal level. The permanence of the result obtained, depends in a large degree upon the influence of friends and relatives.

Insanities from Lead Intoxication

Lead intoxication, so far as the cerebral symptoms are concerned, may manifest itself either in an acute or a chronic form. In the **acute form** the patient presents headache, insomnia, frightening dreams, tinnitus, flashes of light, mental slowness, and depression. Soon delirium ensues, which is often very violent. Hallucinations of sight especially are prominent. The delirium may become more and more pronounced, and may pass on to coma, or the patient may survive and there may be remissions with occasional recurrences of the delirium. Epileptiform convulsions also may make their appearance. In the **chronic form** a dementia is observed which, like alcoholic dementia, bears some crude resemblance to paresis, and is sometimes spoken of as lead-paresis. At other times the patient manifests delusions which are more or less systematized in character, generally persecutory in type. In other words, there is present a paranoia which resembles the paranoia of alcoholism. This form of mental affection is rare.

The **treatment** of the insanities of lead intoxication is to be based, as before, upon general principles. Every effort is, of course,

to be made, as soon as the diagnosis is established, to bring about the elimination of the lead. The iodids should be administered in ascending doses and in as large amounts as the patient will tolerate, while the bowels should be kept freely open by salines, more particularly the sulphates. General physiologic measures, with tonic medication and liberal feeding, are, of course, to be employed as in the other forms of mental disease. The prognosis, on the whole, is not favorable.

Part III

SUGGESTION

PART III.—SUGGESTION

CHAPTER I

NORMAL SUGGESTION

Legitimate Field of Suggestion; Direct and Indirect, General and Special Suggestion. Suggestion in Hysteria, Hypochondria, and Neurasthenia. Suggestion in Other Forms of Functional and Organic Disease.

A discussion of physiologic methods of treatment would not be complete without some consideration of **suggestion.** Whatever view one may hold as to the therapeutic efficacy of this measure, its study will prove not only interesting, but also of practical value.

Much unnecessary mystery attaches to the term. Unfortunately it has been associated very closely with hypnotism, and has acquired an almost specific meaning. To make a suggestion, however, does not mean to impose a hallucination or a delusion upon a person in the condition of hypnotic sleep, but merely to convey to, or arouse in, the mind of another, some thought or idea, in an unobtrusive manner. It is a process that is always taking place, usually unconsciously, among the various individuals of the social body, and is in itself the outcome of perfectly normal mental functions.

Physicians employ suggestion habitually, though most frequently they do so unintentionally and unconsciously. That it often powerfully affects the progress of a case, for good or for ill, every experienced practitioner will admit. Mental factors influence more or less the physical condition of every patient, and this fact is true whether the patient be suffering from an acute or a chronic, a general or a local, affection; from disease of the nervous system or of other structures; from organic lesions or from purely functional disorder.

Suggestion as an adjuvant to treatment may, in skilful hands, aid in the most unmistakable manner in bringing about recovery. Even in incurable cases it may assist materially in keeping the patient comfortable. It may diminish the necessity for the administration of drugs, or it may enable us to give placebos in place of the latter. Without stooping to any dishonest procedure, or imitating the methods of the various mind-curists, faith-curists, faddists or other unqualified practitioners, self-deluded or deluding, striking results can frequently be achieved by simple and perfectly proper means. It is rarely, of course, that we can rely upon suggestion alone; it is commonly as an adjuvant to a treatment by physiologic methods and medicines that suggestion proves of value.

It is hardly necessary to point out how the belief in eventual recovery affects the patient's general condition and nutrition. Other things being equal, the man who feels sure of getting well eats better and sleeps better. The very action of the heart is promoted by this hopeful and contented attitude of mind. Compare such a condition with that of a patient who is tormented by doubt and fear, or in whose mind the conviction has become settled that he is stricken with a serious, or possibly fatal, malady. Instead of cooperating with the physician in a whole-hearted manner, he looks upon the treatment and its various details with doubt and suspicion. That he takes less food, that he digests it less well, that his sleep is more disturbed, that he feels his pains more acutely, that his various symptoms present themselves to him in a grossly exaggerated and distorted form, need hardly be pointed out.

Every physician knows how smoothly the ordinary self-limited and curable affections progress when the patient has confidence in his medical adviser; every physician knows not only this fact, but is even aware of the effect of each separate visit upon his patient. Irrespective of the instructions given to the nurse, or of the modifications in the details of treatment resulting from the observation of conditions present, each visit has a distinctly tonic and bracing effect upon the patient. The nurse, too, acts no inconsiderable part. By the way in which she attends to her duties, by her general demeanor and conduct, even by such trivialities as the raising or lowering of the curtains, will she convey indirectly to the patient suggestions for good or for ill. Many

nervous patients are intensely susceptible to such indirect suggestion. Indeed, this is true of many persons who are apparently well. In a previous chapter allusion was made to the case of a sufferer from hypochondria, who upon hearing of an attack of appendicitis in an intimate personal friend, was himself almost immediately seized with diarrhea and abdominal pain, and going at once to bed, sent for his physician under the belief that he too had appendicitis. Such instances are by no means rare. I need only instance how in the contagion of hysteria, the symptoms may spread from patient to patient until large numbers of persons are affected.

The manner in which suggestion acts offers an interesting problem. The rôle which the nervous system plays in the function and nutrition of every structure of the body is well known. It is probable that every tissue has a nerve-supply that directly dominates its nutrition, though the assumption of special trophic nerves is not necessary to explain this relationship. In the case of the circulatory apparatus, of the glands, of the muscles, and of the bones and joints, physiologic, clinical, and pathologic evidence of direct nervous control is incontrovertible. In the case of other structures, such as the blood-making organs and the ductless glands, this control is a matter of legitimate and logical inference. A moment's reflection calls to mind the relations existing between the cells of the anterior cornua of the spinal cord and the muscles, between the lesion of tabes and the nutrition of the bones and joints, between syringomyelia and painless ulcers, and between lesions of nerve-trunks and changes in the muscles and skin. Fixed relationships such as these, however, are but little influenced by mental and emotional conditions; at least, not demonstrably so. Different, however, is it in the part taken by the nervous system in such functions as circulation, digestion, and secretion. It is in this field that we touch upon facts, elementary in character, but which when considered in their possible relation to suggestion become of the very greatest importance.

Mode of Action of Suggestion

Suggestion—and we are still speaking of suggestion without hypnotism—may act in two ways. It may expend itself upon the mind of the patient alone. Thus, it may affect the emotions and the

general mental state of the patient; or it may affect one or more of the special functions of the nervous system. That the functions of the nervous system are greatly influenced by the mental condition is evidenced not only by numerous physiologic facts, but by a still greater number of clinical facts. That the mental state may be a preponderating factor in an attack of vomiting, of diarrhea, of cardiac palpitation, in changes of the temperature of the extremities, or even in such phenomena as the degree of the patellar reflex, is well known. The common functional nervous diseases, notably hysteria, furnish a still more remarkable series of facts.

Illustrations from the domain of **hysteria** are especially significant because in this affection, as I have shown in the preceding pages, psychic factors are dominant. All of the symptoms bear the impress of their psychic origin and, notwithstanding, there are present the most remarkable physical and visceral manifestations. Among the more frequent are vasomotor disturbances, such as flushing, erythema, mottling of the skin, or, it may be, the condition known as 'blue edema.' In the absence of bleeding from pin-pricks, we have another striking illustration of the same thing. In rapid pulse, rapid respiration, hysterical cough and vomiting, in hysterical yawning and hysterical aphonia, in hysterical anuria and polyuria, we again have incontrovertible evidence of profound visceral disturbances. Even fever of hysterical origin is met with, while trophic disturbances have not infrequently been described, notably of the skin and its appendages, as witness the cases described by S. Weir Mitchell and A. van Harlingen.

How the various portions of the nervous system itself yield to the dominant psychic factor is evidenced by the numerous hysterical motor and sensory palsies—hysterical hemiplegia, paraplegia and monoplegia, stocking-like or glove-like anesthesia, segmental anesthesia, geometric anesthesia, hemianesthesia and the various forms of hypesthesia. Trophic changes in the muscles, even atrophy, may follow persistent hysterical palsy. Obviously, it is in the more readily disturbed functions that the influence of psychic factors becomes evident. Gross organic changes, such as brittleness of bone, arthropathies, and reaction of degeneration in nerves and muscles, do not follow from mere perversions of psychic action.

Methods of Suggestion.—In a book devoted to purely practical questions, psychologic and metaphysical theories as to the action of suggestion would be out of place. They would yield little of practical value, and after all it is the facts of suggestion that interest us as physicians and with which alone we are concerned. In a study of suggestion, the subject naturally separates itself into a consideration of suggestion without hypnotism and of suggestion with hypnotism.

Suggestion without hypnotism is susceptible of scientific application and is often profound and far-reaching in its effects. It may be employed either in the form of indirect or of direct suggestion, and it may be general in its character or it may be special. **Indirect and general suggestion** is the form which is habitually employed by physicians, though, as has been pointed out, such employment is usually unintentional and even unconscious. In it the patient is always unaware that suggestion in any form is being made, but it is none the less potent. **Direct suggestion,** on the other hand, consists in the frank statement to the patient that he is improving or that he will get well. The manner in which the direct suggestion is to be made will depend largely upon the mental make-up of the patient. To patients who are educated, if the facts permit, it is a good plan for the physician to give a brief explanation of the symptoms present, couching his language in the simplest and most elementary terms. Many patients are in such cases completely satisfied. With other persons, the explanation must of necessity be avoided—first, because of the nature of the symptoms, and, secondly, because a discussion of the viscera or of other structures of the body rouses mental pictures that are at once disagreeable and alarming. Direct suggestion is, in my experience, most efficacious when the statement is made moderately. The patient readily builds upon and adds to the suggestion thus thrown out. An overstatement or one made with unnecessary emphasis or exaggeration may fail of effect, while a moderate statement may prove of enormous and convincing force. Care, tact, and judgment must be used in the employment of direct suggestion, for it is not without its dangers. The patient may, for instance, be led to expect a change of symptoms before a sufficient time has elapsed for a change to ensue. Under these circumstances the influence of the physician and the confidence reposed in him by the patient

might be seriously shaken. Again, if the suggestion be made in so blatant and unreserved a manner as to excite the suspicion of the patient, the result may be equally disastrous. Notwithstanding these obvious dangers, there can be no doubt that, when properly employed, direct suggestion is of the utmost value, especially if the physician be one whose personality is forceful and impressive.

Therapeutic Suggestion in the Neuroses

Direct suggestion, as can readily be understood, is most valuable in hysteria, less valuable in neurasthenia, and least valuable in hypochondria. In **hysteria** both direct and indirect suggestion should be employed. Its detailed application depends upon numerous factors, such as the sex, the age, the education, the emotional and mental peculiarities of the patient, and his social state. Details can hardly be entered into for individual cases. When and how, or when not, to employ suggestion in hysteria must depend entirely upon the personal tact and judgment of the physician. It is remarkable how greatly not only the general condition, but various special symptoms, can be influenced. In discussing the treatment of hysteria (see page 108) I pointed out many of the methods by which special suggestion is to be employed. Suffice it here to say that, other things being equal, special suggestion, *i. e.*, suggestion for the relief of individual symptoms, had best be made indirectly. Owing to the peculiar mental condition of the patient, direct suggestion sometimes produces the very opposite result from that intended.

In **neurasthenia** indirect and general suggestion is of undoubted value. Direct and special suggestion has, on the other hand, a limited application. A placebo that will induce sleep in hysteria will frequently fail in neurasthenia. A placebo that will cause a disappearance of a headache or neuralgia in hysteria, is not unlikely to fail when prescribed for similar symptoms in neurasthenia. As a rule, general suggestion only should be employed in neurasthenia; special suggestions may, however, be made, when the physician can safely predict the change of symptoms.

In **hypochondria** we have to deal with a condition in which suggestion has, because of the persistent nature of the affection, a very secondary value. Suggestion does, however, influence the progress

of a case for the time being. Not infrequently an individual symptom may be suppressed. We are apt, however, soon to be confronted by a recurrence of the general sense of ill-being or by an onset of new symptoms that take the place of those which have disappeared.

Suggestion as an Adjuvant

In the employment of suggestion even in those cases in which it is most effective, that is to say, in the great or cardinal neuroses, as they may be termed,—hysteria, neurasthenia, and hypochondria,—we should bear in mind that suggestion is never to be relied upon of itself, but that it should be employed only as an adjuvant to physiologic and medicinal methods of treatment. In other functional nervous diseases, as **chorea** and **epilepsy,** suggestion is of little or no value, while in others still, as **paralysis agitans,** it is of value only in contributing to the general comfort of the patient. In paralysis agitans the physician often pursues a wise course in frankly saying to the patient that the symptoms will not disappear, but that the disease is not immediately dangerous to life, that the patient is in no danger of a 'stroke,' or of a paralysis, and that he will continue to be quite comfortable for a long time to come. This also is the rôle of suggestion in **organic nervous** diseases. Limited though its function may be, it is not to be despised or thoughtlessly thrown aside. Many a tabetic patient is benefited by a full and frank statement as to the nature of the affection from which he suffers, especially if the statement be coupled with the further declaration that the disease is often self-limited, that the pathologic process frequently becomes arrested or that its progress is exceedingly slow. There is a remarkable quality entering into the psychic make-up of every human being, which enables him to become accustomed to some fact in regard to his life, disease or death, no matter how unpleasant this fact may be. There is a veritable psychic compensation that to a large degree eliminates such a fact from his daily thoughts, his daily consciousness; and he learns to put it aside, as it were, and to make the most of the life that is his. To favor and to bring about such a mental attitude is the only, but very important and legitimate, function of suggestion in cases of organic disease. How powerful suggestion is, even in face of a certain

and impending death, to enable the individual to maintain a nervous equilibrium, and even a relative degree of psychic well-being, is seen in the influence of the religious preparation for death in the case of criminals sentenced to the scaffold. The eagerness with which a commutation of a death sentence—a commutation which usually means imprisonment for life—is accepted by prisoners, is another instance of the same thing. It is this factor in the psychic make-up of man that the physician should bear in mind even in dealing with cases of hopeless disease.

Occupation and Amusement in Conjunction with Suggestion

One application of suggestion it is necessary to mention especially, because of its importance. There is a group of cases in which the influence of suggestion is marked, provided the patient can at the same time be kept actively employed or mentally diverted. We have seen in the preceding pages how marked is the tendency in the various great neuroses to introspection—to analysis of symptoms, to self-examination. This condition is manifest in a typical degree in hypochondria, on the one hand, and in melancholia, on the other, while it is present to a less pronounced extent in neurasthenia and in hysteria. In all of these affections, as I have pointed out, suggestion should be employed habitually as an adjuvant to the ordinary physiologic methods of treatment. There is, however, a special field for its application in connection with occupation, amusement, and change of scene. So employed, it proves useful in a large number of cases of mild neurasthenia and hysteria, some cases of hypochondria, and a small number of cases of mild melancholia. Everybody knows the benefit that ensues from travel, ocean voyages, moderate social relaxation, play or amusement. Especially valuable is such diversion if it be coupled with the direct suggestion that the patient's symptoms are of little consequence and that he will soon be well. Again, in discussing the management of hypochondria, I pointed out how important it is to keep the patient occupied. Other things equal, the hypochondriac is better when he is under the pressure of work. Work is a physiologic stimulant to both mind and body. The mere maintenance and stimulation of function will not only in certain cases of hypochondria, but also occa-

sionally in mild cases of nervous or mental depression of various kinds, serve to tide a patient over his period of ill health. It is of the utmost benefit in certain cases to minimize the symptoms and to make powerful and repeated suggestions to the patient that he is not ill, or at least not sufficiently so to justify him in giving up his work. Of course, at the same time that work is urged upon the patient, his personal hygiene, his habits, his exercise, bathing, food, and sleep, should be carefully regulated; that is, in addition to suggestion and occupation, he should receive the benefit of various physiologic procedures.

The number of cases of melancholia permitting of such a method of treatment is of course small. Furthermore, it is necessary that the cases should be carefully selected, lest harm be done. A patient passing through the early stage of melancholia might, by the injudicious application of this method, be made very much worse. It every now and then happens, however, that, owing to the position which a patient occupies, either in public life or by reason of his responsibilities, it is of the utmost importance to keep him in a measure discharging his duties. In such a case, provided it is merely one of simple mental depression,—and not, of course, one of frankly developed melancholia with its hallucinations and delusion of the unpardonable sin,—much success may attend the application of the method. Occasionally the patient can be taken away from his routine work and interested in some other form of occupation or some sport or amusement. The latter is best, of course, if it take the patient out-of-doors. It may thus be conjoined with change of scene, not necessarily travel or change of climate, but removal to another city—say that in which his physician resides—or to a suburb, when physician and patient live in the same town. Not only must the cases be carefully selected, but skilful individualization must come into play in the prescription of the daily life, the occupation, amusement and entertainment of the patient, and the choice of surroundings, including in the latter the personality of associates and of the trained attendant. It is thus obviously impossible to enter further into details.

CHAPTER II

SUGGESTION BY MYSTIC AND RELIGIOUS METHODS; SUGGESTION UNDER ARTIFICIALLY INDUCED HYSTERIA—HYPNOTISM

Pythonism, Shamanism; Magnetism, Mesmerism, Hypnotism, Metallotherapy, Perkins's Tractors; Mind Cure, Faith Cure, Eddyism.

In a book like the present, a discussion of the subjects of the present chapter is—so far as its direct teaching is concerned—somewhat out of place. The procedures employed certainly do not constitute physiologic methods of treatment. On the contrary, they call into being, as there will be no difficulty in pointing out, nervous states that are both abnormal and pathologic. However, both in accordance with the wish and plan of the editor of the system of which this treatise is a part, and because of the necessity of placing in bold contrast mystic and religious methods of treatment with the physiologic procedures already detailed in the preceding chapters, the following section has been appended.

For public reasons, as well as for personal fullness of knowledge, physicians should understand the various methods of so-called 'mental healing,' etc., that from time to time find vogue among large sections of the community. Thus they will be able to recognize and to point out both the positive and the negative dangers that these methods involve; as well as to differentiate clearly in their own minds between such practices and the legitimate employment of psychic influences to promote the recovery of the sick. The subject of hypnotism, moreover, has attained a certain importance in medical jurisprudence that must be alluded to.

Superstition and Magic

Since the very dawn of history, superstition and magic have played a large part in the treatment of disease. That they have continued to do so, even down to our own times, no one will deny. Large

numbers of lay persons are at this very day earnest advocates of religious and superstitious methods, while the medical profession itself is not free from the charge of having at various, and indeed quite recent, times countenanced procedures whose sole recommendation has been the mysticism involved. Four thousand years ago, religious and mystic rites were practised in the treatment of disease in Egypt. Prosper Alpinus informs us that the Egyptian healers subjected their patients to mysterious manual operations, that they enveloped them in the skins of sacred animals and conveyed them into holy places, to be visited by dreams and inspirations. Similar practices were in vogue in ancient Greece and Rome, while among the Hebrews the prophets practised the healing power of bodily contact—often by the laying on of hands. The Psylli, a people of Lybia, were famed for their magic cures; these they performed by stretching their bodies on the bodies of the sick and by making the latter swallow water impregnated with their saliva.

Among the ancient Greeks, a practice called **pythonism** also prevailed. From a cave sacred to Apollo a stupefying vapor issued, which had so powerful an effect as to throw men into convulsions. These phenomena were ascribed to a supernatural agency, while the incoherent ravings of those who inhaled the toxic vapor were regarded as prophecies uttered under the inspiration of the deity. A priestess, called a pythoness, was appointed to inhale the prophetic fumes. In order to enable her to perform the duty assigned to her, a seat, called a tripod, was constructed over the mouth of the cave. Thus the pythoness, inspired by the fumes, made known the will of Apollo to the attendant priests, who communicated the revelations to the inquirer. The disconnected words and cries, uttered by the pythoness in her ravings, were carefully framed into sentences. The priests filled up the breaks with such words, and in such construction, as to give coherent meaning to the whole, and it is not strange, perhaps, that the content of the revelation expressed whatever was most essential to the interests of the shrine. The pythoness was supposed to give advice in regard to private enterprises, public affairs, and also the healing of disease. Crude survivals of similar practices, in which hysteria and deception are commingled, are still found among the north Asiatic races, and, for that matter, among all the savage races

of the world. **Shamanism,** as practised among the Ural-Attaic people, is a good illustration. The Shamanic priests know the secret of the coming and departing of evil spirits. Their offices are generally called in requisition in cases of sickness or death, which are ascribed to the presence or ill-will of demons. By shouts, incantations, by the beating of drums and blowing of horns, the demon is supposed to be driven out. Quite frequently the priest will work himself into a condition of hysteria and even of trance. In Siberia the priest usually sucks the part of the body of the patient which aches the most, and finally takes out of his mouth either a thorn, a bug, a stone, or some other object, which he then asserts to have been the cause of the pain.

More rational and less crude were some of the other methods pursued in ancient times. Thus Asclepiades, it is said, quieted by manipulations the mild insane, and when the manipulation was carried to excess, the patient fell into a lethargic sleep. Cœlius Aurelianus prescribed friction by the hand for the cure of pleurisy and also gave instructions for the manipulation of epileptics. Practices similar to these prevailed at various times in other countries. In the fifteenth century Pomponatius, in the sixteenth century Agrippa, the famous Paracelsus and later Bacon, Cardanus, and Van Helmont, were advocates of the doctrine that the body possesses an influence of **magnetism**—that there is a certain energy which acts beyond the body, that this action is in accordance with the will of the possessor, and that by this means various qualities can be imparted and results brought about.

Mesmerism

The greatest magnetizer that the world has ever produced was Mesmer, who appeared in the latter part of the eighteenth century. In 1774, Hell, professor of astronomy in Vienna, informed Mesmer that he had cured rheumatism in himself by a magnetic process. In consequence of this, Mesmer immediately entered upon a career of treating by magnets every one who applied to him. He distributed magnets in every direction, and in his memoir, published in 1779, he maintained that the heavenly spheres possess a direct power or influence over animal bodies, particularly over the nervous system, and that in this way arises animal magnetism. Being persecuted for his

doctrine, he removed to Switzerland, and later, in 1778, to Paris. There he announced that he could operate powerfully upon the nervous system, and he established himself in a magnificent house in the fashionable quarter of the French capital. His patients were seated around and were in contact, directly or indirectly, with a wooden vessel or '*baquet*' which contained the magnetic fluid. He was regarded as a great magician, and received big fees, while his artful and occult procedures produced astonishing effects. In response to a request from the government, the medical faculty of Paris appointed a commission in 1784 to investigate his claims. This commission consisted of prominent physicians and physicists. Among its members were such men as Franklin, Bailly, Lavoisier, Guillotin, and Poissonier. Mesmer, however, declined to submit his practice and theories to this body, and the commission were forced to undertake their investigations with the aid of d'Eslon, the ardent pupil and disciple of Mesmer. The commission freely acknowledged the facts disclosed by their investigations, but denied the connection of these facts with animal magnetism. Mesmer vigorously protested against this adverse report, but he could not withstand the reaction which it caused. The magic of his spell was broken, and in the following year he left Paris.

Notwithstanding the decision of the Paris commission, adherents made their appearance abroad. Physicians in Bremen, Karlsruhe, Heilbronn, Strassburg, and Berlin followed Mesmer's practices, and during the latter part of the eighteenth and the beginning of the nineteenth century, his teachings were actively studied in Germany. Among others, Wolfahrt, who was sent in 1812 by the Prussian Government to Mesmer at Frauenfeld for the purpose of studying animal magnetism, returned an enthusiastic advocate of Mesmer's doctrines. In France, on the other hand, the Abbe de Faria in 1814 strongly opposed the existence of a magnetic fluid and declared that the phenomena observed in the so-called magnetized subjects were not due to a fluid emanating from the magnetizer, but had their origin in the imagination of the subject, and that the causes of all the phenomena were to be sought for in the subject himself. Faria fully recognized the importance of his views, but he was unable, in spite of the clearness and logic of his position, to make converts of the believers in

mesmerism. In 1821, Dupotet actually introduced the practice of mesmerism into the Paris hospitals. The learned bodies of France, however, consistently maintained their unfavorable attitude toward the subject. In 1826 a second commission, in which Laennec and Majendie took part, again rendered an adverse decision, and although in 1831 Husson made a report to the Academy favorable to mesmerism, it made but a slight impression upon the members. In 1837 a final commission was appointed to investigate the subject; the report was again unfavorable, and the Academy finally decided to concern itself no longer with the subject. Interest in animal magnetism, however, did not entirely die out. In 1842, Gauthier published his "History of Somnambulism," which contributed numerous additional facts to our knowledge of this and related conditions.

While mesmerism was at its height, **three schools** of animal magnetism were developed:

First, the school to which Mesmer himself belonged, and which asserted that the effects obtained were due to physical agency alone. The means employed were friction, touches, passes, and grasping. The resulting phenomena were explained on the theory that a fluid or ether passed from the magnetizer to the magnetized, or vice versa. The adherents of this school were the original advocates of 'animal magnetism.'

Second, the school of Barbarin, the adherents of which maintained that faith was the principal factor required, in consequence whereof they were known as 'spiritualists.' In their minds all physical means were merely accessories. They asserted that the effects attributed to animal magnetism were the products of the resolution or will of the operator, and that the latter could produce identical effects, whether he were in contact with, or at a distance from, the patient.

The third school, that of the Marquis de Puysegur, occupied a position midway between the others; explaining the results obtained, by physical or psychologic means, as the case required.

The term 'mesmerism,' while still used popularly and in general literature, has in medicine, to-day, historical interest only; the practice it denoted, however, persists in a modified form under another name, and to this we shall now give attention.

HYPNOTISM

In England, the subject of animal magnetism was taken up in 1841 by James Braid, who had witnessed the public demonstration of Lafontaine in Manchester. The circumstance that Lafontaine used, besides passes, the expedient of fixing the eyes of his subjects upon a bright object, led Braid to study especially the effects of this fixation, and he concluded that the ocular fatigue thus caused sufficed to bring about the magnetic sleep; he held the object immediately before and somewhat above the eyes of the subject. In his work upon "Neurypnology," published in 1843, he, like Faria, opposed the theory that any force passed from the magnetizer to the subject. Thus, he showed that the experimenter could induce the sleep in himself without the assistance of any other person. Braid also showed how dependent upon suggestion were many of the phenomena observed. He reported the employment of **hypnosis** in numerous diseases with success. Many of his assertions were corroborated by the distinguished physiologist Carpenter and others of high standing, for example, Bennet, Simpson and Laycock; notwithstanding these facts, mesmerism or braidism made but little impression upon England.

Grimes in America obtained independently results similar to those of Braid, as did also Liébeault in France. In 1866, Liébeault published a work on **artificial sleep** and related conditions. Like Faria, he recognized the subjective nature of the hypnotic phenomena. Bernheim, who attended in 1882 Liébeault's Policlinic at Nancy, became an enthusiastic disciple and an active advocate of the therapeutic application of hypnotism. In 1875, Charles Richet published in detail an essay on artificial somnambulism which led Charcot to study extensively the phenomena of hypnotism as induced in the hysterical cases of the Salpêtrière. The results were embodied in a large volume by Paul Richer, under the title "Clinical Studies in Grand Hysteria or Hystero-Epilepsy." Charcot further in 1882 made an extensive report to the Academy of Sciences in which he analyzed the various phenomena observed and separated them into three fundamental groups, namely, those of the cataleptic state, those of the lethargic state, and lastly those of somnambulism.

At the present time there are, so to speak, two schools of hypno-

tism—that of Nancy, founded by Liébeault and Bernheim; and that of the Salpêtrière, founded by Charcot and his pupils. Charcot regarded the symptoms of hypnotism as those of a neurosis and as belonging to the domain of hysteria. This also is the attitude of his followers today. Thus Babinski says that *grande hysterie* is a sine qua non of *grande hypnotisme*, while Gilles de la Tourette declares that hypnotism is nothing else than a paroxysm of hysteria which is provoked instead of being spontaneous. Bernheim, on the other hand, insists on the essential psychic character of hypnosis; he denies that it is a neurosis, and finds only a superficial resemblance between it and hysteria, asserting, moreover, that Charcot's three stages are artificial products. The uniform results obtained by Charcot, he maintains, are due to the fact that his observations were made on hysterical subjects, who were unusually susceptible, and who were, besides, unconsciously 'trained' by the experiments and by the surrounding patients.

Without pausing at this point to discuss these divergent views, let us turn our attention to the manner in which the hypnotic state may be induced.

Methods of Inducing the Hypnotic State

Hypnosis may be induced in a variety of ways. All of the methods, however, can be grouped under the following heads: First, those depending upon sensory impressions; secondly, those depending upon sensory impressions plus fatigue efforts; and, thirdly, those depending upon sleep hallucinations or conceptions aroused in the subject by suggestion.

In the methods of the first group—**sensory impressions**—monotonous or sudden impressions may be made upon various organs; as the eye, the ear, the cutaneous surface. For instance, the subject may gaze steadily at an object which may or may not be bright, or he may gaze at a part of his own person. Again, he may listen to some monotonous sound, as the ticking of a watch or clock, to monotonous musical sounds, or to gentle rustling or rushing sounds like that of running or falling water. Lastly, a part of the cutaneous surface may be gently stroked, always in the same direction. All of these methods have this in common—they bring about a concen-

tration of the attention upon a single impression. The impression being monotonous and continuing uniform, arouses sensations of fatigue; these are in turn followed by the mental attitude of sleep. The attention, being arrested by the continuous or constantly recurring impression, becomes fixed; trains of thought are not established—the function of association is more or less in abeyance; sooner or later the fatigue sensations are attended by sleep hallucinations and hypnosis is established. Sudden or violent impressions may act in a similar way; thus Charcot and his pupils made use of the sudden flare of a calcium light, an electric spark, or—to affect hearing instead of vision—blows upon a tomtom, or other loud and sudden noises. The hypnosis so produced has been spoken of as 'fright hypnosis'; the sudden emotion of fright appearing to be the immediate cause. In this respect it resembles a form of hypnosis induced in animals.

Methods belonging to the second group, namely, those embodying **a sensory impression plus a fatigue effort,** have been practised since time immemorial. The Indian fakirs fixed the eyes thousands of years ago, as they do to-day, upon the point of the nose, while the monks of Mount Athos fixed their eyes upon the navel. Other races and other times made use of magic mirrors, of crystal globes, or of vessels containing water. The monotonous chanting of incantations, again, embodied the principle of the continuous sensory impression and the fatigue effort. Braid, as is well known, made use of fixation of the eyes in such a way as to involve early fatigue of convergence and accommodation. Mesmer, on the other hand, made use of 'passes.' These, when made in contact with the body, acted by monotonous cutaneous impression; or, if at a distance from the body, acted by monotonous visual impression, but more especially by suggestion. Lafontaine, again, practised the combined method of fixation and of passes. Braid's method was gradually used less and less frequently; of recent years it has been employed in conjunction with the verbal suggestion of sleep. Various objects are still used for fixation of the eyes, especially glass balls, metallic buttons, or other small bright or shining objects. Luys has made use of a rotating mirror; Preyer employed a candle-flame, the latter being somewhat raised above the level of vision and close enough to cause marked convergence. Hansen placed large false diamonds upon a dark back-

ground. The eyes or the finger of the operator have often been used; small magnets also. An objection to fixation has been advanced in the fact that the method is frequently not successful, and that if long persisted in, it leads to nervous disturbances of various kinds, more especially fatigue and headache.

In regard to **passes** or stroking, most operators agree that complex movements are unnecessary; it suffices to stroke gently with the palm of the hand—always in the same direction—some one part of the surface of the body, more especially the face, the brow, and the eyelids; or, the hands having been raised, the hands, arms, and body are gently stroked downward toward the hips. According to Löwenfeld, passes made over the face and in direct contact with the latter are the most effective. In many subjects, however, the stroking is objectionable and really prevents sleep instead of furthering it.

In the form of monotonous **verbal suggestions,** auditory stimuli have proved most effective. The method is essentially one of suggestion. It is the object of the operator to induce in the subject, as gently and yet as persistently as possible, the conceptions and sensations that obtain in a person about to go to sleep. This is the method that was introduced by Liébeault and is to-day practised by Bernheim. An explanation should first be given to the subject regarding the nature and action of hypnotism and regarding the nature of the procedure. This is done to obtain his confidence, to allay nervousness, to obtain his entire acquiescence and willingness. It is of the very greatest importance also to have present one or more individuals of the same sex as the patient. The presence of such persons reassures the patient and is a protection, it need not be added, to the operator. The procedure should take place in a quiet room, moderately lighted. The subject, clad in loose and comfortable clothing, should be seated in an armchair, or should recline upon a sofa or lie upon a bed. The operator should then speak to the patient somewhat as follows, in a voice gentle, steady, and rather low: "Look at me and think of going to sleep. You are resting; you have a feeling of restfulness in your entire body; you are becoming more and more sleepy; your arms, legs, your whole body, feel tired. In a little while your eyelids will grow heavy; your eyes will fall asleep; your eyes are closing; you are unable to keep them open; you cannot see with them

any more; your eyes are closed; you are sleeping." In some persons sleep follows almost immediately. In others the procedure must be repeated many times with gentle and drawling, but recurring emphasis. Should the suggestion of going to sleep fail of itself, the procedure may be repeated combined with fixation—any small bright object or the finger of the operator sufficing. Thus, while holding before the subject's eyes the bulb of a thermometer, or, it may be, for the sake of the added mental impression, a magnet, the operator may say: "Look steadily, now, at the object which I hold in my hand and think only of going to sleep." Then he should say, as before, in a monotonous and rather subdued voice: "Your eyes are heavy, they are beginning to close, your eyes are growing moist, you are not seeing clearly, they are closing, you are very sleepy, you are becoming more and more sleepy; your head and body, your arms and legs are tired; you are sleepy; so sleepy, you feel nothing; everything sounds far away, you see nothing, you are very sleepy, your eyes are very heavy, you are asleep." Only exceptionally is the procedure entirely successful at the first attempt. Löwenfeld employs a method somewhat as follows: The subject is comfortably placed in an armchair or a sofa. His eyes are closed and he is told to count for a number of minutes quietly to himself from one to one hundred, the counting being continuously repeated. After a while, the operator begins to suggest sleep in the manner already described. Löwenfeld uses the method of fixation in a majority of cases, but only for a very brief time.

The subject presenting now the appearance of sleep, the presence of 'suggestibility' can be tested by raising the arm of the patient; the arm is gently stroked, while the operator says that the arm is stiff, that he (the subject) will not move it, that the arm is becoming more and more rigid all the time, and finally that he cannot move it. If a fair degree of hypnosis has been induced, the arm remains fixed in a cataleptoid position. The establishment of cataleptoid rigidity is, however, not necessary to demonstrate the existence of the hypnotic state. As a rule, hypnosis is induced more and more readily upon each successive attempt, and instead of making the test by catalepsy, the patient can be awakened during the procedure a number of times; at each time, he can be questioned directly as to whether he has been asleep, and if so, to what extent. Each time the hypnotic procedure is

repeated, the suggestion of sleep is aroused more strongly than before. This method is known as the 'fractional method.'

With refractory subjects, hypnotizers have not hesitated to call to their aid drugs and anesthetics! The patient has, previous to the séance, been given a dose of bromid, chloral, paraldehyde, or an inhalation of chloroform or ether has been given during the procedure. The mere act of holding a chloroform or ether funnel before the face is itself suggestive of sleep, and both Bernheim and Wetterstrand believe that they have noted the existence of hypnosis before the subjects were actually anesthetized by the drug. As might be supposed, the use of drugs and anesthetics as adjuvants to hypnotism has not been followed by uniform results.

Auto-hypnosis.—As was proved long ago by Braid, it is perfectly possible for an individual to hypnotize himself. Especially is this the case in persons who have been repeatedly hypnotized; either the auto-suggestion of sleep or fixation of the eyes suffices. Indeed, a subject sometimes passes involuntarily into a condition of hypnosis, when looking at bright objects. This is one of the dangers to be guarded against by appropriate counter-suggestion in the hypnotic state. There is reason to believe, however, that this counter-suggestion is not always effective.

Awakening of the Patient.—It is usually much easier to awaken the subject than to induce hypnosis. The mere command to the patient to awake is, as a rule, sufficient. At other times, along with the verbal command, the operator may blow into the subject's face, slightly smack his cheek, shake him by the shoulder, call him by name —in other words, he is to imitate the procedures that would be used to awaken a person from normal sleep. Most subjects awaken spontaneously from hypnosis in a few minutes—say in about a quarter of an hour, if undisturbed; quite commonly they awaken almost immediately after the operator has withdrawn from the room. The sleep may, however, exceptionally persist for a much longer period; from one to two hours or even longer. Other things equal, the deeper the hypnosis, the longer the sleep. When the hypnosis is extremely profound, the patient is sometimes awakened with great difficulty. Sudden awakening is, as a rule, unpleasant to the sub-

ject; indeed, it is occasionally followed by a period of depression, or the subject is for a time dazed or confused and sometimes complains of headache or sensations of fatigue. It is always wiser to suggest in the course of the hypnosis that the subject will awaken after a stated interval, say five minutes, or that she will awaken when a certain signal—for example, a knock upon the floor—is given.

Phenomena of the Hypnotic State

The phenomena of hypnotism, like those presented by hysteria, are classifiable into psychic, sensory, motor, and somatic. Among the **psychic phenomena** is especially to be noted an *increased susceptibility of the subject to suggestion.* Ideas verbally or otherwise suggested by the operator are, in the absence of contrary influences, readily accepted by the patient. No matter how absurd intrinsically or how completely out of keeping with the actual facts or surroundings, the suggestion is, as we shall see, received and treated as true. It is clear that the mental processes that would normally correct such a suggestion are in abeyance; that evidence, intrinsic to the falsity of the suggestion or derived from the senses, does not find its way to the field of cortical activity. In other words, the function of association is in abeyance or impaired, and with this change, the faculty of judgment falls wholly to the ground. Again, the suggestion may be one that under normal conditions would be resisted strenuously, but in hypnosis it is accepted tamely, or at most after ineffectual resistance. Certainly the next inference that is justifiable is that the *function of the will is in abeyance* or greatly weakened. Memory also is seriously influenced, both according to the degree of the hypnosis and according to the suggestions offered; but more of this, later.

Among the **sensory phenomena,** there may be anesthesia, local or general, blindness or deafness, suggested or spontaneous, or other modifications of the special senses. Among the **motor phenomena** are palsies, tonic spasm, contractures or even convulsions. Among the **visceral phenomena,** modifications of the pulse and of the heart's action, vasomotor disturbances, and even modifications of the secretions, have been observed. The resemblance or rather the identity of these phenomena with those manifested in hysteria will presently become more apparent.

The **sequence of phenomena** observed in a person undergoing hypnosis is somewhat as follows. Let us assume that the person experimented upon has already been hypnotized a number of times and is therefore what is known as a 'good subject'; and that the operator is using suggestion, together with fixation of vision. The subject, we will say, is comfortably seated in a chair. The operator holds a bright object, *e. g.*, the bulb of a thermometer, a few inches in front of the eyes and a little above their level. At the same time he makes the verbal suggestion to sleep in the manner already described. Gradually the eyelids grow heavy, droop by degrees, and finally close. Just before this happens, it is observed that the eyes cease to converge upon the object, that the pupils become dilated, and that the subject makes one or two movements as of swallowing. As hypnosis becomes established, the entire body becomes relaxed, the patient lolls in his chair, and now presents the outward appearance of sleep.

If the sleep has been produced by verbal suggestion alone, without fixation of the eyes, failure of convergence and dilatation of the pupil are, of course, absent. Swallowing movements may not occur.

Various **degrees of the hypnotic sleep** are recognized; thus, Bernheim speaks of nine stages, Liébeault of six, Fontan, Ségard, and Forel of three, while Gurney, Delboeuf, and others speak of two. Forel classifies the stages as follows: (1) somnolence, (2) light sleep, and (3) somnambulism. In the first stage, that of somnolence, the subject is still able to resist the suggestions of the operator, to open his eyes, and to perform other volitional acts; in the second stage, that of light sleep, the subject can no longer open his eyes, and accepts more or less readily the suggestions that are offered to him, but he subsequently remembers the events of the hypnotic séance; in the third stage, that of deep sleep or somnambulism, the subject, in addition to a ready acceptance of the suggestions, subsequently betrays a loss of memory with regard to the events of the hypnosis and also manifests post-hypnotic phenomena.

As already stated, **cataleptoid** phenomena may be induced in hypnosis, and indeed the possibility of inducing this condition has frequently been used to test the degree or the reality of the hypnotic sleep. By Charcot and his disciples, who studied hypnotism in the hysterical patients of the Salpêtrière, catalepsy was induced in a

different way. The subject was asked to look attentively at a bright object held at a distance of some centimeters before his eyes; after the lapse of a few moments, the object was suddenly withdrawn. When the experiment is successful, the patient becomes immobile; his eyes are fixed and open and staring directly in front of him. His eyes are also moist, or tears may make their appearance. There is anesthesia of the cornea, and indeed of the entire body. At the same time, catalepsy is marked and typical. The limbs retain whatever positions they may be placed in; if the subject is stood upon his feet, he remains in the position which has been given him. He presents the symptom which has been termed 'flexibilitas cerea.' If the condition persist for any length of time, it may eventuate in an attack of 'grand hysteria.' During its continuance, marked suggestibility is noted. Subsequently no recollection of the events of the hypnosis is retained. There is also marked fatigue.

When the bright object, instead of being suddenly withdrawn, is held persistently before the subject, a different set of phenomena are observed. The eyes gradually become closed and the subject falls asleep. He now presents, instead of rigidity, complete muscular relaxation. Anesthesia is present, as in catalepsy, while mental obscuration is more profound. To this form Charcot applied the term **lethargy.** It can be produced notably by persistent fixation of a bright object, but a catalepsy can be converted into a lethargy by merely closing the eyes of the subject. Indeed, by opening one eye and closing the other, the same subject becomes hemi-cataleptic and hemi-lethargic.

In lethargy the knee-jerks are said to be exaggerated and there is also present a condition of hyper-excitability of the nerves and muscles. The latter phenomena have, however, been much disputed.

The term **somnambulism,** Charcot applied to a state which he induced in subjects already lethargic or cataleptic, by slightly rubbing the top of the head with the tips of the fingers or the palm of the hand. The subject passed into a condition in which his senses seemed more acute and it became possible to provoke very complicated automatic actions. Neither Charcot nor his followers believed that his three forms really represented three different conditions. Various transitional stages were observed, and, not infrequently, instances occurred

in which the symptoms of the various stages were present at the same time and commingled.

The truth of such essential and elementary facts as the artificial induction of catalepsy, and the opposite condition of muscular relaxation or lethargy, together with anesthesia, has been abundantly demonstrated not only upon human beings, but also upon animals. It is hardly necessary to refer to the well-known fact that many birds and small animals become motionless when in the presence of danger, and this, too, when escape would seem possible; *e. g.*, the catalepsy of the bird fascinated by the serpent, the lethargy of the opossum in the extremity of its peril. Experimentally a condition of absolute immobility can readily be induced in chickens, ducks, geese, turkeys, canary birds, rabbits, guinea-pigs, and other animals, simply by firmly holding them and gently pressing the extended head and neck upon the surface of the ground or table. The animal allows itself to be manipulated in various ways. Its muscles are flexible or catatonic, as the case may be, and it can be made to assume the most grotesque positions. Generalized catalepsy can be induced very readily in the rabbit, for instance, by holding the animal in the manner just described; a line is then gently traced with a piece of chalk down the nose, and when the chalk reaches the table, a white streak is suddenly drawn along the surface of the latter. Every muscle of the rabbit instantly springs into contraction and it sprawls with limbs and head extended at full length. A similar method may be adopted with other animals; the chalk is not always necessary, the mere finger of the experimenter sufficing. Not only are lethargy and catalepsy readily induced in animals, but anesthesia also is present; this is readily demonstrable, and lasts, as Danilewsky has shown, for from ten to thirty minutes. It is needless to point out that experimental catalepsy in animals is identical with catalepsy in the hypnotic human being. It is interesting to note also that Charcot induced catalepsy in his human subjects by the sudden drawing away of the object of fixation.

Nature and Pathology of Hypnotism

The phenomena of hypnotism are beyond all doubt **pathologic.** So evidently is this the case that it is difficult to conceive that phy-

sicians can be found who entertain the opposite view. On the other hand, it is perhaps not surprising that in that hot-bed of hypnotism, the Nancy school, and by some of its advocates elsewhere, this rational view should be indignantly rejected, as it is by Liébeault, Bernheim, Liégois, Baunis, Forel, Löwenfeld, and Wetterstrand. The Paris school, on the other hand, promptly recognized the identity of the symptoms presented by hypnotism with those of hysteria. It does not weaken this position, to reproach the Paris school, as do Bernheim, Wetterstrand, and others, with studying hypnotism in cases already hysterical. The identity of the catalepsy and lethargy induced in animals, with the catalepsy and lethargy induced in the patients of the Salpêtrière, is a sufficient answer. To say that the great majority of human beings are susceptible of hypnotism, is to say that the great majority of human beings may under given conditions become hysterical, a truth which our ever-increasing experience with the 'traumatic neuroses'—*i. e.*, traumatic hysteria—most clearly shows. Again, the contagiousness of hysteria—so old a story as not to bear extended repetition—is abundantly demonstrated as to hypnotism by Bernheim's own clinic. Here the patients fall asleep with surprising ease. They see daily large numbers of hypnotizations. Each awaits his turn with the expectation of falling asleep. Each is impressed with the wonderful and mysterious power of the operator, his faculty of imitation is unconsciously stimulated, and when his turn finally comes, he is so well prepared that the slightest verbal suggestion suffices.

As has already been pointed out, the phenomena of hypnotism are classifiable into sensory, motor, psychic, and somatic. The **sensory** phenomena are always those of impairment or loss. In light hypnosis, there is merely diminution of sensation; in more marked hypnosis, abolition of sensation. This abolition of sensation is indistinguishable from the anesthesia of hysteria. As in hysteria, it may be general or limited in distribution; as in hysteria, it may involve the special senses. The **motor** phenomena consist of paralysis, tonic spasm, contractures, or convulsions, as the case may be. The suggested palsies of hypnotism are indistinguishable from those of hysteria, as are, indeed, the other motor disturbances. Convulsions may be induced

with the greatest ease, as was demonstrated many years ago by A. J. Parker and myself.

If, in consequence of a suggestion, a palsy occur in an hypnotic subject, it is interesting to note that, just as in ordinary hysteria, the paralyzed limb also becomes anesthetic; in other words, a true segmental anesthesia is spontaneously established. A more convincing or significant fact it would be difficult to imagine.

As in hysteria, the palsies and anesthesias of hypnotism are to be referred to a contraction of the field of cortical activity; a similar explanation holds good for the **psychic** phenomena. This contraction or reduction is seen typically in the impairment or abolition of the function of association and of the function of the will. Thus, the subject is unable, because of impaired association, to correct the erroneous conceptions that the suggestions of the operator arouse in his mind; for instance, when he accepts the suggestion that he is in the midst of a garden of flowers when in reality he is in a room, it is because impressions made upon his senses do not reach the field of cortical activity; or when he accepts a suggestion that is intrinsically absurd and out of keeping with his past experience, it is because the memory of these experiences and of the actual facts of his existence are not aroused and do not enter his field of consciousness. Owing to great depression of cortical function, association is for the time being lessened or even destroyed. It is not surprising, finally, that in hypnosis there is a lessening in that summation of cortical activities which we term the will; the latter is at first impaired and finally abolished. Intrinsically the state of hysteria and the state of hypnosis are the same. Not even with regard to the phenomena of suggestibility does hypnosis differ from hysteria, for hysterical patients are notoriously open to suggestion, even in the fully awake condition.

The fact that in decided hypnosis there is an abolition of memory for the events of the séance, is in keeping with the fact of the general reduction in the field of consciousness. In addition, memory presents a series of phenomena liable to misinterpretation. Thus, during the hypnotic state memory may, as a result of suggestion, be abnormally stimulated, so that the subject is able to recall to a remarkable degree events and circumstances which he is utterly unable to remember in

his normal condition; that is, a condition of hypermnesia can be established. The cortical activity being prevented from expending itself in normal directions, may flow along old and long-neglected channels, pursuing these even to their uttermost recesses. A memory thus artificially brought to light may be accurate, but this is by no means certain; unfortunately, it is possible to suggest to a subject that he has participated in or been present at events that have never occurred, and if asked to give an account of them, he may recite in great detail and with the appearance of truth a long train of fictitious happenings.

It is but a step from this to the phenomena presented by the **clairvoyant** or the **spiritualistic medium.** Auto-hypnosis, like the ordinary form of hypnotism, relieves the cortex of the corrective restraint imposed in the waking condition by the contact of the senses with the outer world. Under these circumstances, the hallucinations pursue an untrammeled course; nor is it strange that they should follow the trend indirectly suggested by the questions of the anxious and too willing listener. Instead of dealing with a fictitious past or an unreal present, the hallucinations may project themselves into the future, and thus assume the form of prophecies. Of similar value are other phenomena, such as **telepathy;** seeing and hearing at a **distance; transposition of the senses,** during which the subject may hear with her stomach or read books through her back; **conversations** in foreign, and to the subject totally **unknown tongues;** and, lastly, even the **invention** of entirely new and unheard-of **languages.**

It is certainly not in my province to discuss these various manifestations, except in the way of warning. To practical physicians they have but the significance of abnormal mental states, and when so analyzed and stripped of the unconscious exaggeration and overstatement of the believers, and of the admixture of fraud and legerdemain of the subject and her friends, they cease to be mysterious. It does not serve to point out that there are specific instances which are unexplained—it does not serve to call attention to special cases of the accuracy of this or that prophecy or of this or that telepathic or mystic communication. The sources of error, the possibilities of self-deception or of gross fraud, are always so numerous as to be beyond

control; they cannot be eliminated. In every instance personally known to myself, scientific evidence—evidence such as is demanded by scientific investigations in other fields—has not been present. On the other hand, the facts of the mental state of hypnosis, of auto-suggestion and of the unconscious suggestion of the environment, afford an abundant explanation for so much as has been plainly genuine. For the rest, let him believe who will. Many years ago I attended a séance at which the medium during her auto-hypnosis became possessed of the spirit of a departed Persian princess. During this condition she wrote many pages of Persian manuscript, which she subsequently read aloud. The manuscript consisted of cursive and connected loops and strokes, with here and there well-formed letters in English script. I did not think it necessary to pursue the investigation further; and I need hardly add that a savant who was present failed to detect the remotest resemblance between the curious sounds made by the medium and any Persian dialect known to students. Need I refer to the case of the young lady who, knowing only English and French, conversed in modern Greek? Again, I say let him believe who will. Or shall allusion be made to the medium who became possessed of the spirit of a young and departed Swedish preacher, and who began preaching in the Swedish language? Unfortunately, among the observers present was one who had the right to marvel at the completeness with which the young Swede had forgotten his native tongue. Probably no more thorough or sincere study was ever made of an auto-hypnotic subject than was made of Hélène Smith by Flournoy, and so interestingly told by him in the volume "From India to the Planet Mars." The visions of this medium are interesting and the invention of the two Martian languages wonderful, and yet, as Flournoy points out, the conclusion is inevitable that all these Martian communications had their origin exclusively in Hélène's own brain.

In addition to the impairment of the function of association, of the will, and of the modifications of memory, the subject also presents, as we have just seen, hallucinations and illusions. In ordinary hypnosis these hallucinations and illusions are suggested by the operator and are readily accepted by the subject. That the subject may also suffer

from spontaneous hallucinations, just as do cases of hysteria, we have also seen. Sometimes the state of hallucination is a negative one; thus, it may be suggested to the subject that a certain person or object present in the room is absent, and the subject accepts the suggestion, notwithstanding all ocular or tactual demonstration to the contrary. This condition has been termed **negative hallucination.** It may likewise be induced in regard to pain and other subjective symptoms of disease, as we shall see when we come to study certain mystic methods of 'healing.' Lesions are of course uninfluenced.

Posthypnotic Suggestion.—A suggestion may manifest itself in various ways in relation to the hypnotic state. Thus, first, it may manifest itself only during the hypnosis; secondly, it may persist after the patient has been awakened; thirdly, it may reveal itself only after the hypnosis has been concluded; lastly, it may become active only after a specified interval of time, the so-called '*suggestion à échéance.*'

Usually, but not invariably, suggestions show no tendency to persist after the hypnotic séance has terminated; such persistence can, however, be secured by suggesting it to the subject. The term posthypnotic suggestion is, however, properly applied to the suggestions which become manifest only after the subject has been awakened. A common instance is one in which the operator suggests to the subject that after he awakens he will perform some definite act—for example, rise and bow to a stranger, to a piece of furniture, or to an imaginary person. The suggestion may, of course, be made very complex, and yet it may be followed quite closely. Experience shows that in most subjects, posthypnotic suggestions have their limitations, both as regards their complexity and as regards their nature; in others they are very closely followed, even when they are intricate, or are unpleasant or repellant to the individual. The hallucinations that accompany the posthypnotic suggestion are apparently very vivid and often very persistent. Thus, Bernheim suggested to a lady that on awakening she would see the portrait of her husband; she saw the portrait immediately, and the vision persisted for twenty-four hours. Londe suggested a portrait, the hallucination of which persisted, it was said, for two years. How vivid and intense a posthypnotic hallucination may become, is instanced by an experiment of Forel.

He said to a young woman during hypnosis: "You will see on awakening three real, dark, sweet-smelling violets with leaves and stems which you will feel." He handed her, however, only one violet. After being awakened, the subject could not tell whether one or two or all three of the violets she seemed to perceive were real or suggested. She thought all three were real; one hand held empty air, the other the real violet.

The posthypnotic suggestion which makes its appearance only after a fixed interval of time (*suggestion à échéance*) is very interesting. A definite act is suggested, to be performed at a definite time; it may be after a given number of minutes, days, months, or even, it is said, a year or more. The subject is apparently in her normal condition on awakening and does not perform the act until the precise time has arrived. If minutes be suggested, the accuracy of the subject is often remarkable. Without a watch or other guide, the suggested act is either performed at the exact time suggested or nearly so.

The posthypnotic suggestion is not, however, so wonderful as it seems; the suggestion made during hypnosis is received, retained, and perhaps relegated to the field of subliminal consciousness. In other words, the paradox exists that it is forgotten after the hypnosis, but still remembered and recalled into the field of consciousness at the exact time. After all, everything depends upon the reality of the absence of memory of the events of the hypnosis; that some kind of memory does persist—call it subconscious memory, if we must,—is self-evident. Besides, if it be suggested to the subject that on awakening all recollection of the séance will disappear, she will, as a matter of course, when questioned, say that she remembers nothing. I am of the opinion that in many cases conscious memory persists, and that the subject is self-deceived. In a successful case the instructions are carried out at the exact time and to the exact letter, even when the period which intervenes presupposes a complex mental calculation and the act itself is difficult of performance. Sometimes the patient will say that she does not know why she performs a certain act at a certain date; as often, however, if questioned by the operator as to her reason, she will say, "Why, you wanted me to do it," or "Did you not tell me to do it while I was asleep?" The performance of an act after an interval during which the patient is unmindful of the suggestion finds its

counterpart, perhaps, in the power which many persons have, of awakening at a predetermined and unaccustomed hour, after having gone to sleep at night as usual.

The **somatic phenomena** of hypnotism are those of hysteria. Thus we have the same vasomotor disturbances; *e. g.*, local flushings, blue edema, and even local bleeding, as in hysterical hemorrhagic stigmata. As in hysteria, the pulse-rate is not especially changed. This is true also of the digestive functions; hunger and thirst can, of course, within limits, be suggested or dispersed by suggestion. The secretions also are not especially altered. The urine, however, may be greatly increased in amount and may show a relative diminution in solids.

Krafft-Ebing and a few other experimenters have maintained that they could produce organic changes in the skin by suggestion. Thus, during hypnosis, a key at ordinary temperature was held before the subject, who was told that the key was red-hot. It was then firmly pressed against the surface of the body; after a number of hours, a blister appeared having the shape of the key. Rybalkin, it is said, obtained similar results at the Salpêtrière, while Focachon states that he has produced blisters by means of postage stamps. These experiments are all of them open to serious objection, for it appears that in no instance was possible deception guarded against. This view is shared by Schrenk-Notzing, who does not regard the evidence as either conclusive or satisfactory. Vesication by suggestion does not, up to the present time, rest upon an indubitable scientific foundation.

Krafft-Ebing has further maintained that the temperature of the body can be influenced by suggestion. Thus he suggested to a patient, whose temperature in the morning was 36.8° C. and in the evening 37.4° C., that the temperature should for three days be 37° C. On the first day it was 37.1° C., and on the two following days 37° C. He suggested to the same patient a few days later that the temperature on the day following would be 36° C. It should be added that at the time the suggestion was made, the temperature was 40° C. from emotional excitement (?). As suggested, the temperature ranged on the following day from 36° to 36.1° C.! No credence can, in my judgment, be attached to these observations, considering the vagaries and untrustworthiness of hysterical subjects.

Claims as to the Therapeutic Value of Hypnotism

If, as I believe, the phenomena of hypnotism belong unequivocally to the domain of hysteria, the question as to the propriety and the wisdom of employing it as a method of treatment assumes a very serious aspect. To induce hypnosis in a patient is to induce hysteria. To answer, as do Wetterstrand and others, that the larger number of persons who are capable of being hypnotized are not hysterical, is merely to say that a large number of persons not previously hysterical, become hysterical under given conditions. If a patient be already hysterical, the process of hypnosis merely deepens the hysteria into somnambulism.

The state of hypnosis is beyond all doubt pathologic. Have we the right to superimpose upon the disease from which a patient suffers, another morbid condition—especially when the result, so far as the original disease is concerned, is, to say the least, doubtful and the expedient is itself attended by a danger more or less grave? The evidence goes to show that the effect of an hypnotic séance is not limited to the actual period of the hypnosis, but endures for some time thereafter; permanently, I believe, in some cases. The very existenc of posthypnotic phenomena proves this proposition. Some change in the psychic make-up must obtain to make the posthypnotic suggestion (*à échéance*) possible, and the more remote in point of time is the completion of the suggestion, the more profound must this change be. Further, such a serious psychic disintegration as is implied by the persistence of hallucinations, can only be viewed with alarm. How profound must be the disturbance which permits a woman in her waking state to see upon a blank wall the portrait of her husband—an hallucination that is accepted as true by the subject and which persists for days and even years! How grave must be the derangement of function of senses and cortex implied by Forel's experiment with the violet; the subject, let us remember, could not when awake tell the real violet in the one hand from the two imaginary violets apparently in the other. In the normal or waking state, impressions made upon the senses find their way to the cortex and there give rise to images which become associated with the previous experiences of the individual. In other words, they are normal phenomena, normally correlated. Vastly different is it, however, in

hypnosis or posthypnotic suggestion. Here the patient becomes the victim of hallucinations which bear no relation whatever to his environment or to the impressions upon his senses, and, what is worse, he accepts these hallucinations as real; in other words, he has lost the faculty of distinguishing between normal mental images or concepts, and hallucinations. To maintain that such conditions are normal, or that such perversions of function are without danger to psychic integrity, is to fly in the face of truth; but more of the dangers of hypnotism later. Let us now turn our attention to the assertions that have been made of its **therapeutic utility.**

Hypnotism is believed by its advocates to be of value in the various functional nervous diseases and in some that are organic or possess a fixed pathology. Thus, Forel asserts that hypnotism is efficacious in pains of all kinds—headache, neuralgia, sciatica, toothache that does not depend upon abscess, insomnia, functional palsies, and contractures; that it is palliative in organic palsies and contractures; that it acts very favorably in chlorosis, menstrual disturbances (both metrorrhagia and amenorrhea), loss of appetite and all nervous disturbances of digestion, constipation and diarrhea (when the latter does not depend upon fermentation), psychic impotence, pollutions, masturbation, sexual perversion, alcoholism, morphinism, muscular and articular rheumatism, neurasthenic complaints, stammering, nervous disturbances of vision, blepharospasm, pavor nocturnus of children, nausea, seasickness, vomiting of pregnancy, enuresis nocturna, chorea, nervous coughing, hysterical disturbances of all kinds, inclusive of hystero-epileptic attacks, anesthesia, bad habits of all kinds, and epilepsy. Wetterstrand, Bernheim, Berillon, Barwise, Herman, Drayton, and Rose also speak of treating epilepsy successfully. Van Renterghem and van Eeden, who enumerate in addition among affections benefited by hypnotism, anemia and psychic depression, were less fortunate in chronic alcoholism, stammering, chorea, hypochondria, nervous asthma, habitual constipation and masturbation, and obtained no result or no noteworthy result in epilepsy, in chronic articular rheumatism, tabes, writer's and piano-player's cramp, organic diseases of the nervous system, and internal diseases. Hilger failed in epilepsy; in Löwenfeld's experience, also, little is to be gained in this disease. Wetterstrand,

Bernheim, van Renterghem, van Eeden, Dumontpallier, and others report satisfactory results in chorea. Löwenfeld affirms success in nervous coughs, asthma, and affections of the heart—including even dilatation of the heart. He, also, together with Schrenk-Notzing, Bernheim, Fuchs, Wilkin and others, reports favorable results in sexual perversions.

Certainly, organic nervous diseases would seem to offer a most unfavorable field for hypnotism. Notwithstanding this, Bernheim, Fontan, Grossmann, Lloyd Tuckey, and others assert the achievement of very noteworthy results in both organic brain diseases (focal lesions) and organic cord diseases (tabes, myelitis, etc.).

As further instances of the character of the assertions concerning affections more or less successfully treated by hypnotism, we may mention brain abscess (Starck), hemorrhoids (Brown), arthritis (Desplats), albuminuria (Desplats), scurvy (Bertschinger), periostitis (Ringier), chronic articular rheumatism (Ringier, Behring, Delius), carcinoma of the kidney (Ringier), post-diphtheritic palsy (Luys), sycosis (Berillon), paralysis agitans (Osgood), paranoia (Bauer, Ringier), trichinosis (van Renterghem), and osteomyelitis (van Renterghem). This list, it need not be added, could be still further and greatly extended, were it to serve any rational purpose.

Regarding the efficiency of hypnotism in **hysteria,** Löwenfeld says that the results are not always what one would expect à priori; opposed to the large number of successful results, there is a large number in which but temporary improvement or complete failure obtains, and in which suggestion during the waking state and other therapeutic measures achieve more than hypnotic suggestion. Curiously enough, Forel also declares that in his experience more can be accomplished in hysteria by skilful suggestion during the normal or waking state than by formal hypnosis, and this is fully in accord with my own observations made many years ago. Do not such admissions as this knock the very keystone out of the arch of therapeutic hypnotism? If there is one disease in which the patient is susceptible to suggestion, it is hysteria, and to admit that normal suggestion equals, if it does not surpass, in efficacy, suggestion under hypnotism, is to admit the needlessness, if not the uselessness, of hypnosis as a method of treatment.

When we turn our attention to another field in which hypnotism should be useful, if ever, namely that of **mental diseases,** we meet with a like disappointing result. To begin with, only a small percentage of the insane can be hypnotized, and even here the effects are unimportant. Most of the advocates of hypnotism lay claim to success in 'mild melancholia,' whatever that may mean,—probably hysteria,—but when any real affection exists, outspoken failure is the result; or if not failure, a result that is, to say the least, questionable. Not even in the neurasthenic-neuropathic psychoses, the insanities of the special fears, of indecision, deficient will, or deficient inhibition, is a result achieved. In the first place, in genuine cases of these affections, the patient can rarely be hypnotized; secondly, when the patient is hypnotizable, the benefit is very doubtful, while there is grave danger of injury. A new neurosis, hysteria, with its manifold possibilities for harm, is imposed upon a nervous system already the seat of grave degenerative changes. The same truth obtains with even greater force in diseases in which the neuropathic degeneration is more pronounced; to wit, paranoia, mania and melancholia, hebephrenia, katatonia, dementia paranoides—in short, the whole group of the neuropathic insanities. How helpless, again, is hypnosis in delirium, confusion, or stupor!

Surgical Anesthesia by Hypnotism

A limited number of surgical operations have been performed under hypnosis. In 1821, Recamier in Paris performed painlessly minor surgical and dental operations. Cloquet in 1826 removed a cancerous breast under hypnotism; the patient manifested no pain during the operation and subsequently had no recollection of what had transpired. Esdaile and Loysel had similar success in the performance of operations. In 1859, Guerineau amputated the thigh of a man under hypnotism; during this operation the consciousness of the patient was fully preserved and he had complete recollection of the operation afterward. Broca, Pozzi, Fort, Tillaux, Johnson, Clark, MacDonald, and others have likewise performed operations on persons under hypnotic anesthesia. It would appear that it is usually extremely difficult to hypnotize patients about to be operated upon; the nervousness and fear are generally so pronounced that hypnosis

cannot be induced, and even when induced, we are confronted by the danger that it is neither so deep nor so persistent that the surgeon can count upon an undisturbed opportunity for the performance of a long operation; further, the necessary absolute quiet is not always secured by hypnosis. At most it can be said that only under very exceptional circumstances can hypnotism be employed for the purpose of surgical anesthesia. Löwenfeld, with Wetterstrand and Davis, believes that the quantity of an anesthetic necessary can be diminished by the simultaneous use of hypnotism, and that complete narcosis can be obtained in a much shorter time than by the ordinary method. Liébeault, Messnet, Dumontpallier, Wetterstrand, Journée, Schrenk-Notzing, and Lugeol assert that the pangs of **labor** can be relieved by hypnosis. Fanton, Fraipont, and Delboeuf believe that hypnosis can hasten or prolong the act, and also that the occurrence of pains at regular intervals can successfully be suggested. Liébault states that a number of times he was able to prevent threatened abortion.

Bernheim believes that hypnosis may be of value for **diagnostic** purposes, particularly that it may help us to distinguish between organic and functional disturbances; that it may also be of use in setting aside hysterical symptoms which now and then are associated with organic diseases; further, that hypnotic anesthesia may be employed in diagnosticating local affections; similarly, Löwenfeld is of the opinion that hypnotic anesthesia is of special value in gynecologic investigations, and that anesthetization of the patient by chloroform or ether may be avoided by this means. Mesnet and others have affirmed that the suggested anesthesia of hypnotism may involve the genital apparatus, and that under this condition various gynecologic manipulations may be performed, the subject being entirely unconscious of them.

Conclusions

In reviewing the assertions quoted as to the value of hypnotism, it is difficult to draw intelligent conclusions. That many of the statements are out of harmony with accepted facts of pathology and out of all keeping with common experience cannot be denied. One cannot but suspect errors of diagnosis, enthusiastic over-statement,

and gross self-deception. In what other light, for instance, can we regard the cases of organic hemiplegia recorded as cured by Bernheim?* What view shall we take of the cases of myelitis cured by suggestion? What of lead-poisoning successfully treated by the same method? Bernheim, for instance, records a case of lead-poisoning with paralysis of the extensors of *one* hand and with analgesia and anesthesia in the forearm *at different times*, in which amelioration of the paralysis followed the first séance, and gradually total cure was brought about. Can one be censured for doubting the correctness of this diagnosis? Is not the suspicion, to say the least, justified that such cases are proved to have been hysterical by the very fact of their amenability to suggestion? That improvement—not cure—may now and then occur in an organic case is not strange when we remember how frequently actual organic disease is complicated by hysteria. Again, when we review in our minds the various functional nervous affections enumerated by the various authors, suspicion as to the hysterical character of the greater number cannot be suppressed; indeed, it seems to be well grounded. What shall we say as to the menstrual disorders, the amenorrhea, metrorrhagia, metritis, chlorosis, anemia, and epilepsy successfully treated by hypnotism? For one, I can but repeat, let him believe who will. As to the cases of epilepsy reported to have been cured by hypnotism, I prefer to believe either that hystero-epilepsy was mistaken for epilepsy or that the cases were incompletely observed; and as regards the diseases of the blood, I cannot exclude from my mind the suspicion that if such disease were really present, other factors were at work to which the recovery was due. Does it seem worth while to discuss the efficiency of hypnotism in chronic articular rheumatism? Here again I must be pardoned if I question the diagnosis and think of hysterical arthralgia. There is hardly an affection which hysteria does not simulate, and it is often extremely difficult to obtain a correct history from an hysterical patient. The latter is often unable by reason of her condition to give an accurate account of herself, but relates to the physician such a history as his questions suggest to her

* "Treatise on Suggestive Therapeutics," translated by Herter, New York, 1900; and elsewhere.

mind, or such history as she involuntarily and unconsciously infers that he desires.

Another question that arises is, whether the relief or cure afforded by hypnotism—say in a favorable case, as hysteria—is permanent, or do the symptoms tend to recur? A fact which does not appear in the reports of published cases, is that the **tendency to recurrence** is very great. True, it is unusual for exactly the same symptom to repeat itself, but commonly *entirely new symptoms* of the *same underlying morbid condition* make their appearance. Some years ago a young woman presented herself at the clinic of one of the hospitals with which I am connected. She complained of a severe pain in the right shoulder, and the case was regarded as rheumatic. Anti-rheumatic remedies, however, failed to produce relief, and this was also the case with massage and the local application of electricity. A hysterical joint was finally diagnosticated, especially as several other surface stigmata of hysteria—for example, inframammary tenderness and inguinal tenderness—were present. The patient further volunteered the information that she had been repeatedly hypnotized by Professor Benedikt with great success for a nervous affection. She was then promptly hypnotized, and in response to a suggestion the pain in the shoulder disappeared. Not many weeks elapsed before she came back with a severe globus hystericus; this being promptly relieved, she returned at a later period with severe neuralgia of both sides of the face. In other words, after one symptom disappeared, it was sooner or later succeeded by another—a not uncommon experience.

Unreality of Hypnotic 'Cures.'—The so-called cures by hypnotism cannot be cures at all. Let us take, for example, the case of a genuine sciatica in which, after a given number of hypnotic séances, the patient is said to be cured. The suggestion has not, of course, influenced the pathologic changes going on in the sciatic nerve. It has merely induced a 'negative hallucination'—the fact of pain has been obliterated for the time being from the patient's consciousness. Morbid states themselves are never changed. It is the mind of the patient only that is acted upon; positive or negative hallucinations are induced, as the case may be; in other words, a pathologic mental state is superadded to the previous condition.

Dangers of Hypnotism

That the dangers of hypnotism are great and manifold is evident both from theoretic considerations and from demonstrable facts. In the first place, the very act of hypnosis implies a functional severance of the normal relations existing between the sense organs and the cortex, and between so much of the cortex as is active and that greater remaining portion in which are stored up the past experiences of the individual, his memory, personal and racial, his tendencies, acquired and inherited. How readily and how markedly this severance may persist in the waking period, we have already seen. Further, the hypnotic state is induced with increasing ease at each subsequent hypnosis; which merely means that this severance having once been brought about, recurs more and more readily. In short, a distinctly pathologic condition has become established, and this pathologic condition is, in many cases, persistent or even permanent. The person thus pathologically affected is now what is termed a 'good subject'! He falls asleep at command, at a glance from the operator, at a knock on the door, or at such other signal as has been suggested under previous hypnosis. At times, indeed, a look, not intended as hypnotic, from a casual stranger, brings on the hypnosis; or it may come on spontaneously when the patient attempts to look fixedly at an object—an involuntary auto-hypnosis. We are told that auto-hypnosis and hypnosis by strangers can be prevented by precautionary suggestions to the patient in the hypnotic state—first that no one but the operator will ever be able to hypnotize him, and secondly that he will never be able to hypnotize himself. Unfortunately these suggestions are not always efficacious. Like other posthypnotic suggestions, they fade with time—just as the suggestion as to the disappearance of a headache or neuralgia may be efficacious at first, but gradually loses its effect.

Furthermore, spontaneous nocturnal **somnambulism** may be seen in subjects who have been repeatedly hypnotized. Dufay records an interesting example of such a case. A young woman, a servant, who had been many times hypnotized, was arrested, charged with theft. Her sister, however, testified that she arose every night, put on her clothing, and walked in her sleep. Dufay, on hearing this,

hypnotized the young woman, and she then stated that one night during her sleep she conceived the idea that certain articles belonging to her mistress were not safe, that in consequence she had gotten up and removed the articles to a place of greater security. During her waking period she had remembered nothing of this. The articles were subsequently found in the place indicated by her to Dr. Dufay in the hypnotic séance.

The subject is also liable to certain dangers **inherent** in the act of hypnosis itself. Thus, patients who are hypnotized by the method of fixation may, as already stated, suffer subsequently from headache, depression, sleepiness, heaviness, fatigue, and disturbances of the general sense of well-being. It is therefore necessary, first, to make use of fixation as little as possible, and, secondly, to suggest during the hypnosis that there will be no headache, fatigue, or other unpleasant sensation afterward, but that the subject will feel bright and refreshed on awakening. We must remember, however, that while the sensations of fatigue may be suggested away, a certain amount of weakness or actual exhaustion may remain. Exhaustion is more likely to supervene when the hypnosis has been unduly prolonged, when catalepsy—especially general and long-continued catalepsy—has been induced, when painful and depressing suggestions have been made, when emotional crises—as paroxysms of weeping—have occurred, or when convulsions have supervened. Under these circumstances, the fatigue and exhaustion may be extreme, and it is needless to add that they cannot be removed by suggestion. In this connection it is interesting to note that rabbits in whom catalepsy has been induced repeatedly, or maintained for long periods, may subsequently die of exhaustion. Such facts show that hypnotism is not to be undertaken lightly; nor is it to be regarded as a method of amusement or diversion. Again, the baneful effects of injudicious, reckless, and ill-considered suggestions, such as place the patient's health, happiness, circumstances, well-being of relatives, and the like, in an unpleasant light, need not be dwelt upon. Instead of being removed by counter-suggestion, they may give rise to serious and persistent nervous symptoms—depression, hypochondriacal ideas and general sense of ill-being. Even death has been known to occur in hypnosis as a result of painful and

horrible suggestions.* It is probable that in such instances the death is comparable to that which ensues upon great shock or fright.

Again, the fact must be borne in mind that in confirmed hysterical subjects, and also in others in whom hysteria has not previously been present, severe **convulsions** may come on even before hypnosis is fully established. The hypnotherapeutists tell us that this tendency to convulsive attacks should be met by counter-suggestions in the hypnotic stage, and especially by careful and repeated reassurances before the hypnosis is undertaken. Unfortunately, these precautions may prove unavailing.

Occasionally patients return time and again for hypnotic treatment, establishing a kind of **hypnotic habit.** Janet especially has called attention to this fact. After a hypnosis, a patient who previously suffered from various pains and other distressing symptoms, experiences under the stimulating suggestions that her pains have disappeared and that she will feel well, bright, and refreshed on awakening, a grateful sense of elation, comfort, and well-being. Unfortunately the suggestion persists for a limited time only,—longer or shorter as the case may be,—when a recurrence of the old symptoms takes place; and now, with mental depression superadded. The patient again seeks the physician, experiences a like immediately pleasant result and subsequent sense of depression. The visit is repeated, a kind of craving ensues, and a hypnotic habit becomes established. Sometimes the recurring visit is interpreted by the patient or by her friends as an attachment, or a sympathy existing between the physician and herself. Cases are not unknown in which the patient has made the relations between herself and the operator the subject of mystic ideas, speaking of 'influences,' 'spells,' or 'magic.' Indeed, veritable psychoses have developed in this soil. The conversation of the physician with the patient and ofttimes the belief of the operator concerning 'hypnotism at a distance," give further foundation for her delusions.

Advocates of hypnotism usually deny that any of the phenomena of the stage of hypnosis **persist** in the waking period. This is evidently an error, for, as we have seen, the very fact of the posthypnotic

* Löwenfeld, "Der Hypnotismus," Wiesbaden, 1901, p. 386.

suggestion evidences the persistence, or—in *suggestion à échéance*—the recurrence, after a stated interval, of hallucinations with their attendant gross modifications of will and judgment. Certainly these phenomena are but the expression of the lasting impress made by the hypnosis, and if will and judgment can so readily be set aside, it is not going too far to assume that their integrity has suffered. A persistence of the increased suggestibility of the hypnotic stage is also usually denied, and yet the suspicion is more than justified that in a modified form this symptom does persist, and that in this respect the patient grows to resemble the ordinary hysterical subject. Assuredly the functional severance (see page 280) of the integral parts of our psychic make-up necessary to hypnotic and posthypnotic phenomena, cannot take place repeatedly without permanent danger to the psychic integrity. Indeed, I personally believe that hypnotism cannot with safety be practised at all, except perhaps within very narrow limits, and that a person repeatedly or frequently hypnotized is permanently damaged. Numerous instances could be selected from literature to prove this statement. A case, recorded by Bernheim, as an instance of the mixture of reality and imagination, of truth and falsehood, met with in a 'normal' individual, will serve as an illustration. The case is that of a young girl, and in abstract is briefly as follows: According to Bernheim, the subject was formerly hysterical, but has for three years been cured by suggestion and no longer presents any nervous symptoms. She is a good-natured, respectable girl. In talking with her or questioning her, nothing unusual is noted in her conduct. A commission of alienists could find no trace of mental disease. "She is mentally sound. I know her to be," says Bernheim, "very susceptible to suggestion, to hypnosis, and to hallucinations in the waking state" (*sic*). He then undertakes an experiment with her which has not as yet been performed with her or in her presence. She enters the room and he says, "Henrietta, I met you yesterday on the street. You were in a remarkable situation, Henrietta! What were they doing with you when I saw you?" Bernheim repeats the question, and at the same time looks at her intently. Her facial expression changes and memory plays over her features. She blushes and says, "I do not like to tell you." Bernheim insists, "You must tell me." In a low voice

she answers, "Some one struck me." "Who?" asks Bernheim. "A working-man." "Why?" She is silent, is evidently ashamed, and does not wish to tell. "Go on, tell me," says Bernheim. She whispers in Bernheim's ear, "Because I did not want to go with him." Bernheim looks at her severely. "Henrietta, you are lying, you try to deceive me. Why did he wish to strike you?" "I tried to steal his watch." "And then?" asks Bernheim. "He took me to the police." The poor girl is covered with shame. Bernheim declares that he then effaces this fictitious memory by saying, "You will remember nothing of this." Bernheim maintains that the case is one of a very suggestible person, whose imagination, trained by numerous hypnoses, converts her hallucinations rapidly into perceptions. It is both curious and interesting to note that Bernheim cites this case as that of a person in perfect mental health, and also as that of a patient cured by means of suggestion. It is indeed an overwhelming proof of the kind of cure brought about by hypnosis! Cured of hysteria, indeed! A remarkable cure, in which the patient has been so far damaged that she can no longer tell the difference between her hallucinations and actual occurrences! How baneful, how criminal, is this training in hypnosis! Instead of being cured, this poor girl was psychically ruined. The case further proves in the most striking manner that the increased suggestibility of hypnosis persists in the waking state; indeed, that the suggestibility of hysteria is enormously increased by hypnosis.

There is another danger to which the hypnotic subject is exposed, and that is the **amateur hypnotist.** If hypnosis is attended by danger even in the hands of skilful and conscientious physicians, how much greater must be the danger in the hands of amateurs! All of the dangers of improper and unguarded suggestions become multiplied—of persistence of unpleasant symptoms, of convulsive seizures, or it may be of somnambulism so profound as to last unduly long or from which the subject can only be aroused with difficulty. How reprehensible are amateur hypnotic experiments, and especially the exhibitions of hypnotism by fakirs upon the public stage! That such exhibitions ought to be forbidden by law, should not need the saying. The harm is done not only to the silly dupes and confederates who occupy the

stage, but to the young people of the audience, who become morbidly interested in the subject and essay experiments for themselves.

The danger to the subject from criminal suggestions will be discussed in a separate section. It is fitting here, however, to speak of another danger of hypnotism, and that is the danger not to the subject, but to the **hypnotic experimenter,** and this danger is not imaginary, but real.

I have already spoken of the **contagiousness** of hypnotism, how each patient is impressed by the hypnotic process in the others. Indeed, it is not unusual in a group of subjects for others than the one to whom the suggestion is addressed to fall asleep at the same time. It is true that the experimenter does not suffer from contagion in this form, but he suffers from contagion nevertheless. Sooner or later, if he but immerse himself in hypnotism long enough, he acquires the mental attitude of his subjects; namely, one of willing receptivity. He becomes possessed of an attitude of mind in which he accepts too readily as fact that which only seems to be fact—is too willing to believe that which he wishes to believe. In other words, he himself passes into a condition of abnormal susceptibility to suggestion; he becomes the victim of **auto-suggestion,** and, in addition, reacts unconsciously to the communications of his subject. His attitude does not differ from that of the believer who sits in the spiritualistic circle, and who reacts alike to the suggestions of the medium and his own spontaneous mentation. That the faculty of critical judgment suffers in some experimenters, there is good reason to believe. In what other way are we to explain such statements as those affirming the successful treatment of genuine epilepsy and of organic diseases of the nervous system? How are we to explain the belief of otherwise reputable men in 'hypnotism at a distance'—*i. e.*, hypnotism by mail, by telegraph, by telephone, and even by the simple act of will of the operator, the subject being at a distance and ignorant of the operator's intentions? Is it not probable that auto-suggestion and contagion on the part of the experimenter offer a like explanation for such mysticisms as telepathy? In what other way are we to explain the 'authenticated' instances of seeing and hearing at a distance, of conversations in unknown languages, or of such other absurdities as the 'transposition of the senses'? (See page 275.)

If the experimenter be not of good nervous fiber, and if he have the misfortune to hold mystic views and theories, his mental health may indeed be seriously endangered. At least two instances have come to my attention in which the mental integrity had suffered unmistakably through intense devotion to hypnotism. Hypnotism exerts upon some minds the charm of mystery, of a field as yet unexplored, of a means by which the intricacies of mind may be fathomed, the laws of 'psychic force' determined, physics and chemistry set at naught,—of souls communicating with souls distant alike in time and space, of fresh proof of the immateriality of the spirit;—no wonder that under these circumstances some minds give way, sacrificed on the altar of hysteria!

Ethical Relations of Hypnotism.—The facts thus far considered certainly justify serious doubts first as to the propriety, and secondly as to the utility of hypnotism. However, if these doubts be waived and it be conceded that under certain conditions hypnotism is proper, it at once becomes evident that certain ethical relations must obtain. In the first place, the person to be hypnotized must be adequately informed as to the procedure and told exactly what the operator intends doing. The statement should be frank and full. Secondly, it is obviously improper to hypnotize a person against his will. At once we are met by the statement that a person cannot be hypnotized against his will. This is true in regard to a first hypnosis, but in persons who have been hypnotized many times, and who have been trained to go to sleep at command, or at a given signal, the hypnosis can probably be induced without any consent on the patient's part whatever. Again, it is obviously and necessarily an ethical part of the treatment that the suggestions be confined strictly to the purpose for which the hypnosis is induced. This is the only proper and legitimate course. The operator is not to allow himself to be tempted to use his patient for the subject of experiment—not for the induction of catalepsy; not for the induction of somnambulistic phenomena; not for the performance or demonstration of posthypnotic suggestions. Least of all is it right to induce in the patient grotesque, unpleasant, or painful hallucinations, the effect of which may persist in the waking state. Briefly summarized, the points which are to be borne in mind in a

case in which hypnosis has actually been determined upon are as follows: First, the operator should make a preliminary statement to the patient as to the sleep about to be induced and as to the objects to be attained. Second, there should be present one or more witnesses, one of whom at least should be of the same sex as the patient. Third, the hypnosis should preferably be induced by verbal suggestion rather than by fixation—or, if fixation be used at all, it should be to as limited an extent as possible. Fourth, the fractional method should be employed, as by this means the degree of the hypnosis can be at any time determined, without the induction of an experimental catalepsy. Fifth, a moderate degree of sleep suffices to bring on typical suggestibility—very deep hypnosis lessens suggestibility. Sixth, the suggestion should be made gently, but firmly, persuasively, and with emphasis. It should be repeated eight, ten, or a dozen times. Some operators take hold of the right hand of the subject and accentuate their suggestion by pressure upon the hand. Grossmann has pointed out that the suggestion is more apt to be successful when it is made indirectly and embodies in itself some rational explanation; thus, in suggesting the disappearance of a pain, he thinks it best to suggest to the patient that the sleep is quieting the nerves, that by quieting the nerves it is greatly benefiting them, and that in consequence of this the pain will pass away. Seventh, the therapeutic suggestion having been made, it is now necessary to say to the patient that on awakening he will feel very well, bright and refreshed, and that he will experience no fatigue whatever. Eighth, the patient should now be awakened. This can be done in the manner already described (see page 268), or it can be done by suggesting to the patient that in a given number of minutes, say two or three, he will gently awaken.

Criminal and Legal Relations of Hypnotism

When we turn our attention to the question as to whether it is possible successfully to suggest to a hypnotized person the commission of crime, we find that the evidence is altogether negative or nearly so. Taking, first, **crimes against the person,** assault and murder, we find no case upon record in which crime has been committed as a result of hypnotic or posthypnotic suggestion. During hypnosis, suggestions

contrary to the general habit or opposed to the moral make-up of the individual are successfully resisted. In other words, both the credulity and the obedience of the subject have their limits. Thus, Löwenfeld suggested to a young woman, whom, because of her pliancy, he frequently used for purposes of demonstration, that she was standing on the edge of a lake and was about to take a bath. This was said after the subject had already accepted and carried out a number of the most diverse suggestions. Notwithstanding this, she at once replied: "It is now April and it is still too cold to bathe in the lake." Löwenfeld insisted, "You are mistaken, it is July and a very hot day. You are very glad to be able to take a bath." However, the subject persisted, in spite of all the contrary efforts at suggestion made by Löwenfeld, that it was April and too cold to bathe in the open air. Löwenfeld is of opinion that it was not her belief in the unfavorable season of the year, but the fact that bathing would necessitate the removal of her clothing, that prevented her compliance with the suggestion and served as the basis for her resistance. Another subject refused to enter into an imaginary conversation with a person with whom she was at enmity. One of Gilles de la Tourette's patients, to whom a bath was suggested, did strip herself, but here the personal equation doubtless enters, and perhaps the fact should be taken into account that in Continental clinics patients are accustomed to obey without question the instructions of physicians, whether these require exposure of the person or not. Another of Tourette's patients went so far as to open her corset, but instead of disrobing, passed into hysterical catalepsy. Cocke handed a card to a subject and commanded her to stab him, a suggestion which she tried to enact without hesitation. He then handed her an open pocket-knife and repeated the command. She raised her hand, but instead of stabbing Cocke, fell over in an hysterical paroxysm. Other 'well-trained' subjects resist suggestions which merely offend the proprieties. Thus, a subject of Delboeuf refused to embrace a man, and another could not even be brought to embrace a clothes-pole. A patient of Pitres successfully resisted the posthypnotic suggestion to embrace a young man; another when it was suggested to her that she must strike one of the bystanders and the enactment of the suggestion was insisted upon, passed into lethargy. A subject of Richet who impersonated various characters,

resisted strenuously the suggestion that he was a priest. Another subject of Delboeuf, a young woman, refused to take a flower from an altar. A boy fifteen years old fled in terror at the suggestion that he should steal a watch. A patient of Pitres, as a result of post-hypnotic suggestion, took a coin from a table, but at once returned it to Pitres.

Abundant experimental evidence exists of the ability of the subject to resist improper or criminal suggestions; on the other hand, as already stated, no evidence exists to prove the actual commission of crime as a result of hypnotic suggestion. In this connection, it is important to make broad distinctions between crime committed as the result of persuasion, argument, or inducement, and crime committed as a result of hypnotic suggestion. Every rational human being is influenced by argument, by the logical presentation of facts, by appeal to the emotions, by play upon the passions, hopes, desires, and ambitions. It is in this way that leaders arise, it is in this way that strong minds dominate those that are weaker,—it may be for good, it may be for evil; but surely the 'influence' so gained is a very different thing from suggestion under hypnosis.

Several remarkable cases of crime, as a result of **personal domination** gained by means other than hypnotism, are upon record; but here the methods employed were those by means of which men in their normal condition influence each other. As to **murder,** it will serve to recall such cases as that of Gray and MacDonald, of Gabrielle Bompard, or that equally remarkable case in New York in which a valet killed his employer at the instigation of a lawyer. The case of Gray and MacDonald is briefly as follows: MacDonald, recently married, was employed in Kansas by a farmer named Gray. It so happened that Gray had as neighbor a certain Thomas Patton, who was an important witness in a suit against Gray, and it was to Gray's interest that Patton should be gotten out of the way. Gray began in a systematic way to arouse in MacDonald's mind the suspicion that Patton was saying things derogatory to MacDonald's wife, that he was ruining her reputation. Erelong MacDonald and Patton quarreled, whereupon Gray warned MacDonald that Patton intended to kill him at their next meeting, that Patton was a bad man who had already killed a number of people. Gray further

advised MacDonald to be prepared, and to anticipate Patton's designs; he gave to MacDonald, who had never before used firearms of any kind, regular instruction in their use, actually erecting a target and teaching the pupil how to aim. Finally he gave gun and cartridges to MacDonald, led the latter to a place at which he knew Patton would pass, and again urged MacDonald to kill Patton, repeating and reiterating the assertion that otherwise Patton would murder MacDonald. Shortly after Gray left the scene, Patton appeared and was shot to death by MacDonald. Gray and MacDonald were both arrested and tried. Gray was convicted of murder in the first degree and hanged, while MacDonald was acquitted. It need hardly be pointed out that hypnotism played no rôle here whatever. As well might it be claimed that Othello was hypnotized by Iago. Murder was committed by a second person at the instigation of the real criminal, but the methods by which MacDonald was influenced were those of cogent argument and powerful persuasion. Again, Gabrielle Bompard was the willing *accomplice* of Eyrand in the murder of Huissier, not a hypnotic subject. That she was morally defective is a fact merely in keeping with her crime; that she was devoted to Eyrand and unhesitatingly cooperated with him is no evidence of abnormal influence; other women have done the same. The manner in which she lured the victim to his death merely illustrates the extreme depth and degradation to which her moral nature had sunk. The murder of the New York millionaire, who was chloroformed to death by his valet, at the instigation of a lawyer, who did not even enter the house of his victim, is still fresh in the public mind. Here again there is no question of hypnotism, merely one of solicitation, argument, and promises of gain.

While the cases cited and others of a similar nature can be brought forward as instances of murder by **instigation,** I am aware of none that can be cited as an instance of murder as a result of hypnotic suggestion.

When we turn our attention to the question of **sexual assault** during hypnosis, or of **cohabitation** in consequence of a posthypnotic suggestion, the facts again yield a negative answer. We are told by Mesnet and others that anesthesia of the genitals may successfully be suggested to a subject, and be so profound as to permit of various

gynecologic procedures; if so, why may not sexual assault be committed? It is extremely probable that in spite of the local anesthesia, the general reaction of the subject, physical and nervous, would be so great as to lead to immediate awakening. Nor would suggestions by the operator that he is the lover or the husband of the subject, or that the latter ardently desires him, be of avail. The innate resistance of the woman of average moral make-up would here enable her to repel the suggestion. We have already seen that suggestions offensive to propriety and decency are spontaneously resisted. Again, one of Delboeuf's subjects denied the suggestion that she was engaged, another repelled the suggestion that she was married and fled at the approach of the supposed husband. Several cases of supposed sexual assault during hypnosis are, it is true, upon record; but they will not withstand investigation. One occurred admittedly in the person of a public woman, and her voluntary acquiescence is a matter of legitimate supposition. Another is stated to have occurred in the presence of the victim's mother, who noticed nothing of the assault! A third, the case of Castellan, did not occur either during the hypnotic state or as a result of hypnotic suggestion.

A very remarkable case of supposed hypnotic sexual assault—so believed by Grashey, von Schrenck-Notzing, and Preyer—attracted considerable attention in Germany some ten years ago. An Austrian lady of noble birth, the Baroness von Z., a spinster, thirty-eight years of age, rich and of a blameless religious life, not being well, and suffering from pain in the head and stomach, placed herself for treatment in the hands of a certain Polish hypnotizer and magnetizer, named Czynski, whose advertisement in the public press had attracted her attention. Czynski, as it subsequently transpired, was a man of unsavory record. He was thirty-five years of age, had taught French in Cracow, where, up to 1890, he had also advertised extensively that he had discovered a new method of cure by means of hypnotism and magnetism. About this time he abandoned his wife and began living with a divorced woman, who subsequently bore him a child. Two years later he appeared with his mistress and child in Posen, where he gave public exhibitions in hypnotism, occultism, and allied subjects. Here and in the neighboring towns, which he visited,

he met with extremely meager pecuniary success. He obtained some money by false pretense, and in consequence was driven out of Prussia. In April, 1893, he resumed his pursuits, with the addition of palmistry, in the city of Dresden. It was here that Baroness von Z. became his patient. Czynski treated the lady by laying on of hands, and also ordered various medicines. His relations with the patient gradually became more and more intimate, until in October or November, when the Baroness became his affianced. According to the Baroness's own account,—given at the subsequent legal proceedings,—Czynski some time in October declared his love for her, while she was asleep, *i. e.*, hypnotized. "I was surprised and frightened, but I felt great pity for him. He told me further that he was poor; that the woman who accompanied him was merely his medium; that his wife had been untrue to him and that he was very unhappy; that I alone could save his soul and make him happy; that he wished to procure a divorce, turn Protestant, and marry me. I wept, I deeply pitied him, and believed that I must do a good work. In reality, however, I felt no love for him." Czynski continued thenceforth to make declarations of love, both verbally and by letter. "He flooded me with letters, pressed me continually, and talked during my treatment only of love. He constantly besieged me. I did not want to agree to his proposition for a rendezvous, and yet I could not withstand him and had to go to him. We often spoke of religious matters, and then he would say to me that I could save his soul. This gave me a certain satisfaction and I consented. I no longer had any control over myself, I felt that I was entirely under his influence. Intercourse did not occur during the sleep-like condition, only I was influenced in such a way that I could not resist him. Even though I realized that what I was doing was wrong, I could not resist. I resisted sexual intercourse, but in the end I could not, and so it happened." In numerous letters written subsequently by her to Czynski, she evinced entire satisfaction with the relations existing between them, and further declared that she honestly loved him and would never part from him. The engagement was kept secret at Czynski's request for "political reasons." He told her that he was the last descendant of a princely house—Prince of Swiatopelk,—also that he was a duke, and that a public engagement and marriage might result

unpleasantly. He now parted company with his mistress, telling the latter that his wife was about to return to him; at the same time he took steps to secure a formal divorce from his wife, changing his religion from Catholic to Protestant, in order to facilitate his designs. Several months later, February, 1894, a secret pretended marriage took place between the Baroness and himself in Munich, a friend of Czynski's counterfeiting a Protestant clergyman.

The 'marriage' proved Czynski's undoing. The father and brother of the Baroness, learning of the occurrence, notified the police, and Czynski was promptly arrested. Although the Baroness was made acquainted by her relatives with the fictitious character of the marriage, she declared, "I love Czynski! He is a man of honor; he has not deceived me, that is all wrong. Christ forgave the thief on the cross, why should not I forgive Czynski?" It was only later, when she learned through the court proceedings how Czynski had lied to her and deceived her, that she experienced a revulsion of feeling.

Czynski was indicted upon several points, only one of which concerns us; namely, that by means of hypnotism and suggestion he had reduced Baroness von Z. to a condition of loss of will—a condition in which, being without free will, she was subject to *his* will, and that while in this condition he had sexually assaulted her. This charge virtually represented the contention of the experts for the prosecution. However, the facts do not present the picture either of sexual assault during hypnosis or of sexual assault the consequence of a posthypnotic suggestion. What Czynski did was merely to use argument and persuasion and appeals to the emotions. Added to this, he was an unusually handsome man, with beautiful eyes and an attractive baritone voice. The Baroness, on the other hand, was an old maid; and here lay happiness clamoring at her feet! Further, we are informed that her family history presented both tuberculosis and repeated instances of insanity, that she herself had suffered from a series of nervous disorders in youth, that she showed undoubted signs of defective judgment, of lack of will-power, and indeed of actual mental feebleness. She was also exceedingly superstitious and believed the most absurd things. No wonder that she yielded to the handsome and youthful Czynski. Grashey, Preyer, and von Schrenck-Notzing were opposed by Hirt and Fuchs, who maintained

that the relations between the Baroness and Czynski had as their basis the natural emotions and needed no theory of hypnotism to explain them. The jury sensibly took the same view, and on this count of the indictment Czynski was acquitted, though on the others he was convicted.

Evidence with regard to the successful suggestion of other crimes by hypnotism is largely **experimental.** Thus, it has been proved experimentally that a hypnotized person may be **induced to sign** checks, papers, or legal documents. I do not know, however, of an actual instance in which this has been done for criminal purposes. **Theft** also has been suggested successfully in experiments upon hypnotized subjects, and in one case with disastrous results. Liébeault, at the instance of a colleague, made a posthypnotic suggestion of theft to a young man of seventeen or eighteen years of age. As a result of this suggestion, the young man stole two small statuettes. These were subsequently returned by a messenger. Two months later, he stole an overcoat. He was discovered and arrested. Upon his person was found a note-book in which he had kept a record of a number of small thefts, and although his attorney maintained that he was a victim of hypnotic suggestion, he was sentenced to two months' imprisonment. Liébeault, who for a time was inclined to regard the subsequent thefts as indirect consequences of the original suggestion made by him, hypnotized the subject again, and now learned that the latter had, subsequently to Liébeault's hypnotism, been hypnotized again by Liébeault's colleague. It was the colleague who made the suggestion to steal the overcoat and other small articles of which the subject had kept a record. Liébeault considered that in this case the tendency to theft had been aroused by the experiments which he, together with his colleague, had performed. Whether the suggestion would have been successful if the subject had been a person of firmly established moral principles cannot, of course, be determined. In any event, the punishment of the thief is to be heartily applauded in view of what we know of the ability of the subject to resist, and also because a most dangerous precedent would otherwise have been established.

It is interesting to note that two of the most prominent apostles of

hypnotism, Krafft-Ebing and Bernheim, hold opposing views regarding the kind of individual who is most susceptible to hypnotism. Thus, Krafft-Ebing says that the susceptibility to hypnotism depends upon a special psychic and corporeal make-up. Indeed, he speaks of it as a 'hypnotic gift,' just as though it were some exalted quality with which special individuals are endowed. He states further that it is found more frequently among persons who are nervously healthy than among those who are nervously ill, and especially does he maintain that the stronger-willed a man is, and the more capable mentally, the more readily can he be hypnotized. Bernheim expresses himself in a diametrically opposite manner. Everything that lessens the power of reason, everything that depresses or weakens brain control, he says, increases susceptibility. Undoubtedly, Bernheim is right. It is the man who possesses less individuality, less personal force and less strength of will, who is the most pliable and the most receptive of suggestions; not the resolute, the strong-minded. Is it an evidence of exalted qualities of mind that one of Krafft-Ebing's patients, a woman of thirty-three years, under hypnosis and under the influence of the suggestion that she was a child of only seven years, at once assumed the manner, the conduct, and the characteristics of speech befitting the suggested age? Is this indicative of mental strength or stability? It seems unnecessary to carry the argument further. A typical 'good subject' is Henrietta, the patient of Bernheim, whose case was quoted on page 290. Hysterical, neuropathic, defective in development—this is the kind of psychic make-up that becomes the sport of the hypnotist; not the healthy-minded man or woman.

Charcot and Gilles de la Tourette express themselves most emphatically on the general **relation of hypnotism and crime.** They point out that the subject is not always an entirely passive being, that he often examines the suggestions made to him, and that his credulity has its limits; that it seems proved by most careful observations that it is impossible, as a matter of fact, to make a somnambulist agree to commit an actual crime; and that, finally, while in the records of legal medicine cases of violation are numerous enough, yet there does not exist a single case in which a somnambulist has acted criminally under hypnotic suggestion.

Legally it is impossible to admit hypnotism as an excuse for crime. The standard by which a man is to be judged in whose behalf absence of responsibility is alleged, because of a hypnotic suggestion, is the same as that by which all other accused persons are to be judged. The *sanity of the accused* can furnish the only test. If a whilom hypnotic subject is sane, his responsibility is that of all other sane persons. It is too late, to-day, to accept the excuses of 'witchcraft' and 'possession.'

A **legal danger** to which the **operator** may be exposed arises from the fact that hypnotic subjects may have **sexual hallucinations** or dreams, a memory of which may persist in the waking state. Charges of assault in hypnosis have actually been made in consequence of such hallucinations, as in the case cited by Löwenfeld of a physician who hypnotized a young girl alone; fortunately, the attendant circumstances were such as to clear the operator, but the case, notwithstanding, proves the reality of the danger. It is analogous to that arising from the erotic dreams of ether-narcosis and like conditions.

Hypnotism is now and then, upon theoretic grounds, looked upon as a possible means of obtaining **confessions** from criminals. In the first place, criminals are not very susceptible to hypnotism; and, secondly, Lombroso's experiments have shown that a criminal will lie as readily in hypnosis as in the waking state. Finally, that a fictitious memory may be developed under hypnosis, we have also seen (see page 275). Almost any reply could be obtained under hypnosis by suggestive questions, and the statement of the average criminal under such a condition would have about as much value as the maunderings of the clairvoyant. Further, every one knows how, even in the waking state, suggestions with regard to past events are accepted by perfectly normal individuals. A familiar instance is seen in the unconscious training of witnesses previous to legal trials. A person whose memory of a given event is merely general, and often somewhat vague, may be led by suggestive questions to give his memory definite shape and form with regard to the most minute details. Opposing witnesses of apparently equal honesty and equal desire to tell the truth often make very conflicting statements. If

memory be unconsciously so falsified in normal persons, how much more readily can it be falsified under hypnosis!

Summary

The foregoing considerations of hypnotism, to my mind, justify the following general conclusions. To begin, if hypnotism be at all applicable as a method of treatment, it is applicable to an exceedingly limited number of cases. Not even in hysteria is its use necessary or justifiable. Experience shows (see page 282) that suggestions in the normal condition are more potent in hysteria than suggestions under hypnosis; in addition to which it must be remembered that hypnotic suggestion enormously exaggerates the suggestibility of the patient during the waking state. I have no quarrel with him who tries to influence such affections as psychic impotence and sexual perversions, though the task is most frequently a thankless one. I can conceive too of surgical cases—rare to be sure—in which for some reason the ordinary anesthetics, ether or chloroform, cannot be used or in which cocainization is impracticable, in which hypnotic anesthesia may be tried and perhaps prove successful. On the whole, however, the field for hypnotism, under the best conditions, is practically *nil.* Of a truth, hypnotism never cures any affections except those which are readily curable by other and physiologic measures; while it induces, let me repeat, a distinctly pathologic state. In spite of all that has been maintained to the contrary, proof is lacking that hypnotism possesses any genuine curative power. How 'artificially induced hysteria' can cure, passeth human understanding. It ranks of necessity with 'mind cure' and the imbecilities of Eddyism.

Metallotherapy.—Metallotherapy is a mode of treatment in which various metals are applied to parts of the body affected by disease. Like many other methods, it is very old. Aristotle, Galen, Paul of Ægina, Ætius, Paracelsus, and others considered that it possessed special virtues in the treatment of the most diverse affections. They, however, attributed the curative powers to the magical inscriptions which the metals bore. It was not until the eighteenth century, when animal magnetism was the order of the day, that the

subject was seriously studied. In 1754, Lenoble, instead of using metals, made artificial magnets, with which he treated numerous affections. In 1774, as we have already learned (see page 260), Hell, of Vienna, recovered from rheumatism, in consequence, as he believed, of the application of magnets. He also reported the case of a woman cured of cardialgia, while Bauer, of Vienna, was healed of a stubborn ophthalmia, and Osterwald, a director of the Academy of Sciences of Munich, became well of paralysis through the same means. Mesmer began a very extensive use of magnets, but soon abandoned them, finding that he could achieve the results he desired as readily without them, as with them. Various other physicians, Unzer, Bolten, Heinsius, Weber, Manduyt, Andry, and Thouret, published cases treated by metallotherapy, while Wichmann anticipated some of the results of Burq. It was the latter who, in 1849, made an elaborate study of metallotherapy and erected it into a well-defined method. In his thesis, published in 1851, he described his first experiences in regard to the influence of metals upon anesthesia, namely, the production of tingling sensations, heat, perspiration, redness, and the reappearance of sensation. Burq was vigorously opposed; but notwithstanding, succeeded, after a struggle of thirty years, in attracting to his method the serious attention of scientific men, and finally the Société de Biologie appointed Charcot, Luys, and Dumontpallier to investigate it; later Landolt, Gellé, and Regnard were added to this commission. Burq maintained that the application of metals to a limited part of the surface of the body was capable of causing the disappearance of the paralysis of sensation and motion produced by hysteria. He further asserted that the same metal is not suitable for every individual; that a special metal is required in each given case. He also believed that the internal use of metals produced the same therapeutic effect as the application of the metal to the skin. He went so far as to assert that the application of the metallic discs not only causes general sensation to return, together with dilatation of the capillaries and rise of temperature in the paralyzed limb, but also that it cures blindness, deafness, loss of smell, and loss of taste. For instance, in a case in which one-half of the tongue was not sensitive to colocynth, the tongue became perfectly normal after the application of plates of iron. Patients in whom gold

produced similar results remained entirely insensible to iron, copper, and zinc; while in cases in which the latter metals were effective, gold was without result. The same facts obtained when the metals were used internally.

The commission reported in 1877, first, concerning the phenomena resulting from the application of metals to the surface of the body of patients suffering from disturbances of sensation. On applying a disc of metal, generally of small dimensions,—a piece of money, for example,—on an hysterical patient, attacked by permanent (*sic*) hemianesthesia, a return of sensibility was effected at the end of ten or twenty minutes in a zone several centimeters above and below the site of application. This return was preceded by tingling, pricking, and a kind of 'trouble in the perception of sensations,' as a result of which a cold body like ice appeared hot. There was observed at the same time a local elevation of temperature in the part, appreciable by a thermometer, and, in the case of the upper extremities, an increase of strength that could be demonstrated by the dynamometer.

The extension of the sensitive area was more or less progressive around the metal, subsequently it involved the entire limb, and finally the whole anesthetic side. At the same time there was effected a dilatation of the capillaries; when a pin puncture was made before the application of the metal, the puncture would not bleed, while if a puncture were made after the application, the puncture not only bled, but the escape of blood was considerable.

The experiments with the internal administration of the metals seemed no less convincing than the preceding. A patient sensitive to gold took each day a dose containing two centigrams of gold-and-sodium chlorid. Eight days later there was a complete return of sensibility, general and special, restoration of the muscular strength, a considerable improvement in the general condition, and a reappearance of the menses after two years' cessation! Another patient, equally sensitive to gold, experienced like good effects from the internal administration of gold chlorid. A third patient was placed on pills of copper dioxid and water of Saint-Christau, for which there were soon substituted pills of copper albuminate, containing each two centigrams. The number of these pills was gradually increased to

five. There was first a very marked improvement, but the treatment having been suspended by reason of the appearance of "gastro-intestinal *accidents*" (!), the patient very quickly lost that which she had gained. When the intestinal disturbance had passed away, the water of Saint-Christau was resumed, and at the end of ten days the patient had made a satisfactory recovery. Two hystero-epileptics, sensitive to gold, were likewise submitted to an appropriate internal medication; sensation and motion became normal and the hysterical attacks disappeared.

The committee also noted a new fact, which had escaped Burq, namely, the so-called **phenomenon of transfer,** *i. e.*, that while the sensibility and muscular force reappeared on the paralyzed side, the normal side lost in general and special sensations, in temperature and strength. The committee further believed that hemianesthesia from organic lesion also could be cured. Thus, anesthesia of ten years' duration and due to cerebral lesions was said to have yielded to gold. In two cases with hemichorea and hemianesthesia due to old lesions and in which the anesthesia was permanent and never varied, the application of the metal was as successful as in hysteria. A hemianesthesia of even thirty years disappeared, though the return of sensibility was delayed for three hours. Charcot endeavored to explain these phenomena as the result of an electric current developed by the contact of the metal and the skin. Rabuteau explained them by a chemical action which he believed to take place between the metal and the moisture of the skin. It was also noticed that after the sensation returned from the internal use of the metal, the anesthesia could be made to reappear by a fresh application of the metal externally. Charcot gave to this symptom the name of metallic anesthesia. Burq maintained, however, that in such case the patient had not yet been entirely cured, and that treatment should have been continued. Charcot, and after him Debove, after a long experience with metals, electricity, and magnets, arrived at the conclusion that the last-named agents were more powerful and yielded more constant and more successful results. Subsequently magnets only were used. Westphal visited Charcot in 1878 and afterward studied the question in Berlin; Westphal reported that in many cases of hysteria he obtained

the same results as the French investigators, but that it took him longer. He also obtained, however, exactly the same results with mustard plasters, and even with other substances which were not metallic. Marigliano and Sepelli achieved results like those of the French, as did also Thompson, Wilks, Ost, Mader, and others. Bennett, in 1878, obtained identical results by the application of wooden buttons in a case of hemianesthesia and hemialgesia of one year's duration. On the other hand, internal metallotherapy met with failure in his hands. Bennett was inclined to the theory that the results were due to the influence upon the patient's mind, rather than to the application of the metals; he called attention to the fact that hysterical patients, being under the influence of emotion and attention, were apt to undergo rapid or sudden changes of symptoms. At the Forty-seventh Congress of the British Medical Association, Beard called attention to the numerous sources of error in the reported experiments with metallotherapy, and also reported that he had treated a number of organic as well as functional affections by "mental therapeutics," as he called it, and that he had obtained far better results than by other methods. Doubts concerning the value of metallotherapy then began to spread. Douglas Aigre, in his thesis, "A Clinical Study of Metalloscopy and Metallotherapy in Anesthesia" (Paris, 1879), after a thorough consideration of the subject, came to the conclusion that the investigators had not paid sufficient attention to the hysterical factors present, and therefore constantly committed errors; he maintained that the success which was attributed to metallotherapy was due to the expectant attention of the patients. Following this severe criticism, various investigators in France, Germany, and Italy made experiments in both men and animals, in which they endeavored to exclude the factor of expectant attention, and the results were asserted to be very satisfactory. Absolute success was reported, *i. e.*, full recovery with no relapse, in hysteria,—hystero-epilepsy, with all the attendant phenomena, such as hemianesthesia, hyperesthesia, paraplegia, monoplegia, blindness, contracture,—and also in chorea, diabetes, hemianesthesia from lead-poisoning and from alcoholism, and herpes zoster; also in hemianesthesia of organic origin. In this connection it is interesting to note that in a case of hysteria Thermes

obtained similar results with a piece of ice. Jourdanis, a pupil of Dujardin Beaumetz, investigated the subject of **xylotherapy,** *i. e.*, the application of wood instead of metals. He obtained results similar to those of metallotherapy.

These subjects are not at the present day awarded serious consideration. After all, the assertions of the metallotherapists were merely those of Hell in another form—the assertions originally adopted by Mesmer and subsequently expanded by him into the theory and practice of healing by the magnetic fluid. The transition from metallotherapy to magnetotherapy, and Mesmer's final transition from magnetotherapy to hypnotism, is both interesting and natural. It seems remarkable that it did not occur to any of the French investigators even to test the truth of their observations by control experiments. How easily it was done by Bennett with his wooden buttons and by Westphal with his mustard plasters!* The history of metallotherapy is only another instance of the fact that physicians do not differ from the common man in their love for the mysterious. Like the common man, they time and again become the victims of self-deception and auto-suggestion. The spell of mysticism beshrouds thought; accurate thinking and even accurate seeing become impossible; and, as in hypnotism, operator and subject react unconsciously upon each other in an endless chain of suggestion and auto-suggestion.

In connection with metallotherapy, it is interesting to speak of a special form of this mode of treatment devised by one Elisha Perkins, an American physician, who was born in Norwich, Connecticut, on January 16, 1741, and practised in Plainfield. About 1796, he invented a method of treatment with **metallic tractors,** so called because they were supposed to draw disease away. These consisted of two needles, one resembling brass and the other resembling steel, but they were made of a composition of metals. They were three inches long and were pointed at the ends. The needles

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* In a case of hysterical monocular blindness with mydriasis and violent blepharospasm, and, later, spasmodic flexure of the arm, the editor of this series induced recovery by exhibition, first, of a Charcot magnet, and after relapse, of an imitation-magnet of wood. See report by G. C. Harlan, "Tr. Am. Ophth. Soc.," 1880–84, iii, pp. 649–654.

were united, and in using them, the pointed ends were passed over the affected parts, until some reaction occurred. They were chiefly used in local inflammations, pains in the head, face, teeth, rheumatism, and like diseases. The points were applied to the affected part and then drawn over it in a downward direction for about twenty minutes. Perkins obtained considerable support for his method of treatment in the United States, and it was also quite favorably received abroad. In Copenhagen physicians endorsed his method, while in London a Perkinsian Institute was established for the treatment of the poor. The list of persons asserted to have been cured by the tractors amounted at one time to an almost fabulous number. A few years, however, after Perkins's death, the wonder-working needles disappeared and were heard of no more. Haygarth, of Bath, obtained identical results with wooden cylinders made to imitate the tractors, and the practice could not survive the consequent ridicule. Doubtless both in metallotherapy and in Perkins's tractors, as in Charcot's magnets, the dominant factor at work was suggestion. How powerfully suggestion acts in hysteria, even in the waking state, we have already seen. In addition, the monotonous impression produced upon the skin by the application of a metallic surface or the steady strokings of the Perkins tractors suggests the monotonous impression of the hypnotic experiment.

MIND CURE, FAITH CURE, EDDYISM

Mind Cure and Faith Cure

We come now to consider briefly the methods of treatment which have as their essential and common characteristic the induction of a **negative hallucination** (see page 277). We have already seen how, in hypnosis, the pain of a sciatica can be suggested away; that is, excluded from the field of consciousness. A negative hallucination having been established in the patient's mind, pain no longer exists. Similarly in mind cure and in faith cure, the essential feature of the treatment is the suggestion to the patient, or by the patient to himself, of the absence of the various symptoms which he presents. Combined with the negative hallucination of the

absence of disease, or the non-existence of disease, there is also the positive belief of the patient in his well-being. The suggestions are made or supposed to be made in the waking state. In many of the reported cases, however, there is reason to believe that there was established some degree of hypnosis. Indeed, the very monotony of the repetition of the suggestion, the fixation of the mind of the subject upon one idea, and the constant repetition of the idea to him, or by himself in some set phrase, embrace the common factors of the induction of hypnosis. That powerful results, however, can be induced by suggestion in the waking state, we have already seen. Bernheim has repeatedly declared that hypnosis is not at all necessary to achieve startling effects by suggestion.

Numerous cases of striking results achieved by mind and faith cure and suggestions in the waking state are upon record. Thus, Eastman has reported recovery from deafness, from aphonia, from traumatic paralysis, and from insomnia, through mind cure. A. H. Burr has reported a case of paralysis following injury, disappearing under faith cure; while Hudson, Desplat, Gorodichze, Anacleto, Jacobs, Stadelman, Goudard, Cocke, Gallet, van Renterghem, and others have reported striking instances of cure as the result of suggestion in the waking state. The cases cited are similar to those which have been reported as cured by hypnotism; and after the full discussion given to the latter subject need no further elucidation. The cases placed on record by Hudson, however, of surgical operations performed painlessly in the waking state, are exceedingly interesting and instructive; though their authenticity is open to attack. The first is that of a boy in whom a hypnotist endeavored to induce anesthesia, previous to the amputation of a crushed leg. The hypnotist failed to induce sleep, but, notwithstanding, strongly suggested anesthesia. Amputation was performed without an anesthetic and the boy declared that he did not feel any pain. The second case is that of a country fiddler, in whom also a leg had to be amputated. He refused to take an anesthetic and insisted upon having his fiddle brought to him, saying that he had always fiddled his pains away and that he could do it now. He played while the operation was performed and declared that he felt no pain. In the third case, a patient who suffered from a disease of the knee-cap for which ampu-

tation was advised likewise refused an anesthetic. He declared that he wished to be an eye-witness of the operation, which was performed, and, it was said, instead of being painful, was actually pleasurable to him. Hudson also cites the case of an hysterical patient of the elder Hammond, whom Hammond could make insensible to pain by merely telling her positively that all feeling was abolished. He once opened a bone felon for her, carrying the knife to the periosteum, without the slightest sensation being experienced by the patient. In the fifth case, it was suggested to a woman by her husband, a physician, that she would not feel the slightest pain while a dentist operated upon a diseased tooth. She subsequently declared that she did not even know that the tooth had been operated upon. Cases such as those just cited are certainly remarkable—if true—as instances of successful surgery under waking suggestion, and they surely equal any thus far reported as having been performed under hypnosis.

Eddyism (Christian Science)

Eddyism, or so-called 'Christian Science,' is a complex system of mystic healing founded some twenty years ago by Mary Baker G. Eddy. She wrote a book, entitled "Science and Health, with a Key to the Scriptures." She speaks of her system as a discovery and as a divine revelation. As a child she claims to have heard supernatural voices calling her by name. She opened a college for her teachings in Lynn, Mass., where she has trained many thousands of pupils. She is regarded as the head of the sect or church which she has organized and she must be implicitly obeyed by her disciples.

The following citation can be considered as a statement—as nearly coherent as anything emanating from the same source—of the essentials of the Eddyist belief: "First, as adherents of truth, we take the Scriptures as our guide to eternal life. Second, we acknowledge the way of salvation demonstrated by Jesus to be the power of truth over all errors, sin, sickness, and death, and the resurrection of human life and understanding to seize the great possibilities and living energies of divine life."

In explaining her views upon disease and cure, Mrs. Eddy says first, that human beings in their higher qualities are not separate

persons from God, but of one substance with Him; hence they are immortal. Second, there is an immortal mind which must be separated from a mortal mind, which last does all the mischief in the world. This last mind believes in disease and death. Third, matter has absolutely no existence in any form. All is mind or nothing. Human bodies do not exist, because God is ignorant of matter, disease, or death. Mrs. Eddy unfortunately contradicts herself not infrequently. Thus, she constantly assures her patients that there is nothing wrong with them, that they have no disease; and yet in reporting her cures to the world she speaks of having healed cancer, consumption, and other diseases. Further, she says that as the body and organs do not exist, it is of no use to examine them, and there is no disease; yet, notwithstanding, Eddyist practitioners affirm that they cure local diseases. Disease being a false belief in the mortal mind, Eddyists allow no medicine to be given to patients.

Patients are treated by one of two ways. First, by persuading the sufferer that he is well; second, by 'silent influence,' that is, the healer brings her mind to bear upon the patient; this influence may be exerted by her at any distance. If a death results in spite of the Eddyist treatment, the believers answer that the death is not a real death, but a delusion of the mortal mind. As to surgery, Eddyists have set dislocated bones without touching them. However, they advise calling in a surgeon!

It is interesting to note that Mrs. Eddy was from childhood on, fond of such subjects as metaphysics, moral science, philosophy, and logic, and that she was always very positive in her opinions.* She was at one time a practitioner of homeopathy, she is an ardent advocate of woman's rights, has remarkable energy and zeal, has the most implicit faith in herself and her mission, and communicates this faith to her disciples. Her followers are drawn largely from the well-to-do, those that can contribute moderate amounts to the wealth of the church. The ignorant and the uneducated classes furnish but a small proportion of the Christian Scientists; no special

* In this and following paragraphs Dr. Harry T. Marshall's excellent paper, "A Study of Christian Science," "Johns Hopkins Hospital Bulletin," No. 111, June, 1900, p. 128, has been used freely.

propaganda has been carried into the ranks of the poor. It is reported that Mrs. Eddy was herself quite poor before she discovered Christian Science, but that at present her material prosperity is very great. She has magnificent homes both in Boston and Concord, and is said to give over $80,000 annually to charities!

The account of her discovery of Christian Science reads as follows: "In 1866 she was returning with her husband at Lynn, Massachusetts, from an errand of mercy, when she fell upon the ice and was carried helpless to her home. The skilled physicians declared that there was absolutely no hope for her, and pronounced the verdict that she had but three days to live. Finding no hope and no help on earth, she lifted her heart to God. On the third day, calling for her Bible, she asked the family to leave the room. Her Bible opened to the healing of the palsied man (Matt. ix, 2). The Truth which set him free, she saw; the Power which gave him strength she felt; the Life Divine which healed the sick of the palsy, restored her, and she rose from the bed of pain, healed and free. She walked into the midst of the family, they cried out in alarm, thinking that she had died and that they beheld her ghost! This miraculous restoration dates the birth of Christian Science." How she is regarded by her devotees, the following citation will show. Says the "Christian Science Journal": "Surely the people of the coming centuries will vie with each other in doing homage to the Rev. Mary Baker G. Eddy, the greatest character since the advent of Jesus Christ, and her book, 'Science and Health, with a Key to the Scriptures,' will go down in history part of the sacred writings of the ages."

The method in detail which the Eddyist healer pursues is somewhat as follows: he or she sits beside the afflicted one and confidently, positively and repeatedly declares that the disease is non-existent. In addition, the healer, or both the patient and the healer, read from Mrs. Eddy's book. The following selections from the book illustrate the method of practice and the believer's point of view:

"Always begin your treatment by allaying the fear of patient. Silently reassure the patient as to his exemption from disease and danger. Watch the result of this simple rule of Christian Science, and you will find that it alleviates the symptoms of every disease.

If you succeed in wholly removing the fear, your patient is healed. The great fact that God wisely governs all, never punishing aught but sin, is your standpoint whence to advance and destroy the human fear of sickness. Plead the case in Science and for Truth, mentally and silently. You may vary the arguments, to meet the peculiar or general symptoms of the case you treat; but be thoroughly persuaded in your own mind, and you will finally be the winner.

"You may call the disease by name when you mentally deny it; but by naming it audibly, you are liable to impress it upon the thought. . . . To prevent disease or to cure it mentally, let Spirit destroy this dream of sense. . . . Argue with the patient (mentally, not audibly) that he has no disease, and conform the argument to the evidence. Mentally insist that health is the everlasting fact, and sickness the temporal falsity. . . . If the case is that of a young child or an infant, it needs to be met mainly through the parent's thought, silently or audibly, on the basis of Christian Science.

"If the case to be treated is consumption, take up the leading points included (according to belief) in this disease. Show that it is not inherited; that inflammation, tubercles, hemorrhage, and decompositon are beliefs, images of mortal thoughts, superimposed upon the body; that they are not the Truth of man; that they should be treated as error, and put out of thought. Then these ills will disappear. If the lungs are disappearing, this is but one of the beliefs of mortal mind. Mortal man will be less mortal, when he learns that lungs never sustained existence, and can never destroy God, Who is our life. When this is understood, mankind will be more Godlike. What if the lungs are ulcerated? God is more to a man than his lungs; and the less we acknowledge matter or its laws, the more immortality we possess.

"You say a boil is painful, but that is impossible, for matter without mind is not painful. The boil simply manifests your belief in pain, through inflammation and swelling; and you call this belief a boil.

"When the sick recover by the use of drugs, it is the law of a general belief, culminating in individual faith, which heals; and according to this faith will the effect be.

"Mortal mind confers the only power a drug can ever possess.

"A physical diagnosis of disease—since mortal mind must be its cause, if it exists—generally has a tendency to induce disease.

"The daily ablutions of an infant are no more natural or necessary than would be the process of taking a fish out of water every day and covering it with dirt, in order to make it thrive more vigorously thereafter in its native element.

"When there are fewer doctors and less thought is given to sanitary subjects, there will be better constitutions and less disease."

The discussion of so-called Christian Science as a religion is best left to theologians. As a therapeutic method it concerns not only medical practitioners, but every rational human being. Undeniably the treatment is one of **suggestion,** and, speaking more specifically, of suggestion by the induction of the **negative hallucination.** The rise and spread of the cult, while remarkable, is, however, far from being a phenomenon unparalleled in history. Leaders of such movements not infrequently present striking instances of the force and power of persons who, developing mystic ideas in early life, conceive, and finally firmly believe, that they are endowed with a special mission for the reformation of the world, and have thus been stimulated to exert themselves with remarkable persistence and energy. They are often undeniably great in the scope of their delusions and the force and persistence with which they promulgate them—and what shall we say of their followers? The latter are merely examples of the spread of a delusion, a true *folie communiqué.* The leaders present instances of the mystic form of paranoia. They are characterized by the existence of hallucinations in their early years, the gradual evolution and systematization of delusions, and the great mission which they regard as the object of their lives. In due course they undergo a veritable 'transformation of the personality.' It is this transformation which usually marks the beginning of the 'mission.'

Eddyism is more than a passing fad; it is a great and actual danger. The denial of all disease, the neglect of all medical treatment, the defiance of all sanitary regulations, make the so-called Christian Scientist dangerous not only to himself and his family, but

also to his neighbors. His tenets bring him into crass conflict with the authorities and lead him to contemptuous defiance of the law. Moreover, what can we think of the sanity of the creature who allows his child to perish of diphtheria when the life-saving antitoxin is at hand, or who will suffer his child to become hopelessly blind rather than have its ophthalmia treated by a physician? Such insanity should be dealt with as crime; this is, indeed, the only remedy.

Other mystic methods could here be considered were such consideration of practical value. The literature of occult medicine, exclusive of works upon hypnotism, is quite considerable. All the methods, however, no matter under what name they are couched, 'vital force,' 'psychic force,' 'mental medicine,' 'natural suggestion,' 'science of life,' 'power of mind,' 'power of will,' 'force of mind,' etc., are based upon the induction of the negative hallucination. This we have already sufficiently discussed. With the especial negative hallucination as to the disease, there is associated the induction of the general positive hallucination of well-being. The subjective accompaniments of morbid processes alone are recognized by mystic medicine. The organic basis to which the pain or other unpleasant symptom owes its existence is ignored. It is, so to speak, hallucinated away. The advocates of mystic healing fail to realize the hopelessness of their situation. The seat of the higher psychic activities, the cortex, can only be cognizant of changes taking place within itself. Normally these changes are correlated with the changes which take place in the body or in the environment. To interpret *artificially* induced changes—hallucinations and delusions—as correctly representing transformations in the organism or in the external world is an absurdity which falls to the ground of its own weight.

Mystic medicine is as old as the race. Some forms have gone, others have come, but no matter how the dress has been changed, the method is always the same. The incantations of the 'medicine man' differ in no essential from the incantations of the eddyist or the doweyite. Each deals with disease as the result of sin and crime, as evidence of the anger or the ill-will of the demons or of the gods, who must

be appeased by prayer, charms, and magical rites; or who must be opposed by some occult knowledge or mystic power possessed by the healer. Civilization merely adds a complex outward raiment, but this raiment conceals the same old puerile superstition and magic that characterized the medical practice of our savage ancestors.

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